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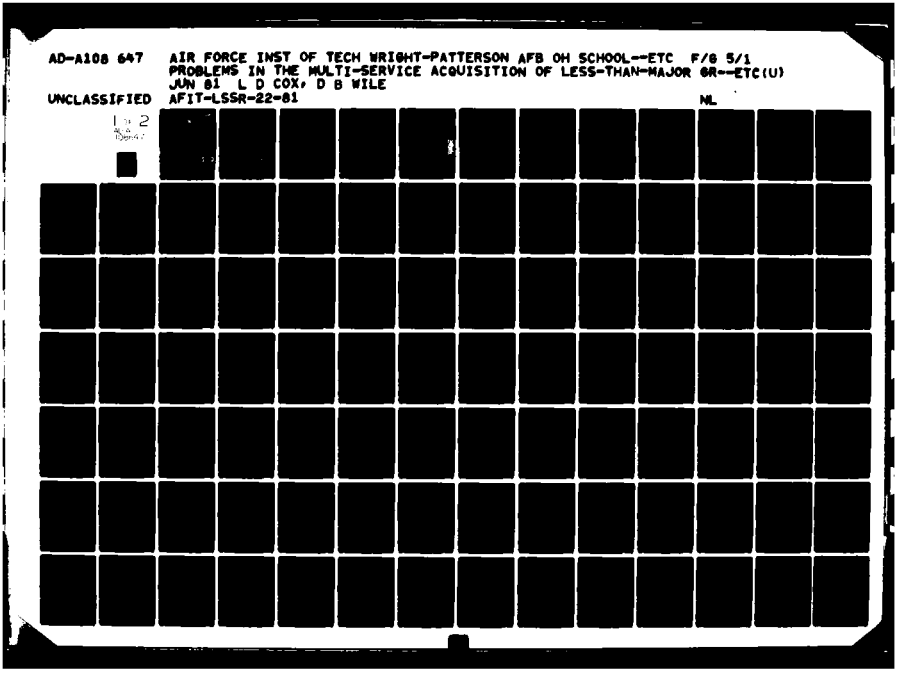

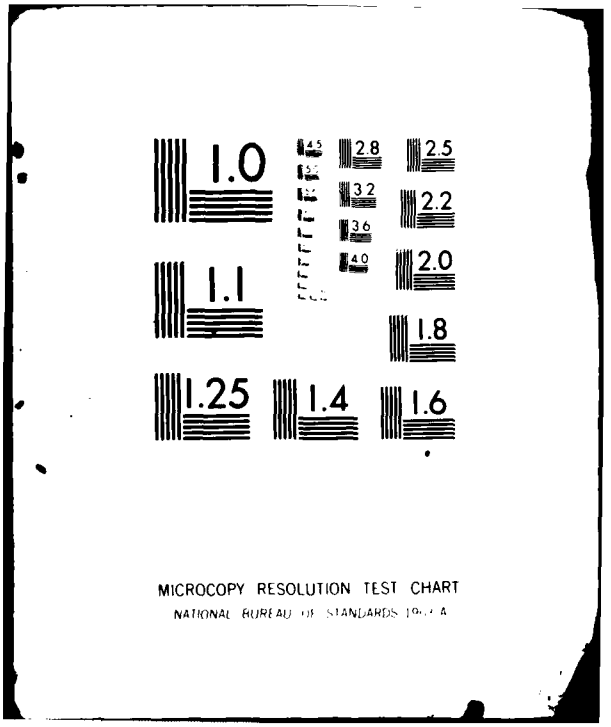
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PROBLEMS IN THE MULTI-SERVICE ACQUISITION OF LESS-THAN-MAJOR GROUND COMMUNICATIONS-ELECTRONICS SYSTEMS

Captain Leland D. Cox, USAF
First Lieutenant David B. Wile, USAF

LSSR 22-81

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Acquiring defense systems which can be used by more than one service offers a potential for savings through elimination of duplicated efforts. Army and Air Force have been jointly acquiring satellite communications terminals; however, evidence exists that these joint service programs have experienced many problems. The authors discovered problems in several areas. These areas included management information, coordination between services, provisioning, funding, and training. Computer systems used in the individual services are not compatible, resulting in costly, time-consuming manual workarounds. Problems arise in cross-coordination between services because of different procedures, formal guidance, and terminology. The major area of difficulty is provisioning; here, procedural differences are most noticeable. Funding problems result in service parochialism as attempts are made to protect service funds. Finally, there has been little specific training for personnel assigned to multi-service programs. After discovering these major problem areas, the authors make specific recommendations for improvement, as well as outlining several key areas for further research.

LSSR 22-81

PROBLEMS IN THE MULTI-SERVICE ACQUISITION OF LESS-THAN-MAJOR GROUND COMMUNICATIONS-ELECTRONICS SYSTEMS

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Logistics Management

By

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First Lieutenant, USAF

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This thesis, written by

Captain Leland D. Cox

and

First Lieutenant David B. Wile

has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

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CHAPTER I

INTRODUCTION

One of the key responsibilities of the military logistician today is to reduce the cost of acquiring and maintaining defense systems. One method proposed for achieving cost reduction is the use of multi-service acquisition programs. Under this concept one service, called the executive service, is responsible for acquiring a system for itself and/or other services, called the using or participating services. Some of the potential advantages of this concept include reduced costs from avoiding duplication of effort, inventory savings, and standardization of equipment and spares (10:14.4-5). However, there is reason to believe that the multi-service acquisition process may not work as efficiently or effectively as it should.

Problem Statement

Specific problems exist in multi-service acquisition programs. These problems must be identified and solved in order to achieve more effective and efficient management of these vital programs.

Background and Justification

In a letter addressed to the Air Force Institute of Technology (AFIT), Mr. T. A. Jones, Deputy Director of

Equipment, Headquarters Air Force Logistics Command (AFLC), discussed multi-service acquisition programs. According to Mr. Jones, in recent years, systems entering the Air Force operational inventory through multi-service acquisition programs have expanded quite rapidly. One area is ground communications and electronics equipment. Here, the Army, as the executive service, purchases equipment for its own as well as Air Force use. Mr. Jones stated that "problems arise because of different support philosophies within the two services [6]." He added that at its best the system

> . . . is confusing to those people working in the acquisition community. At its worst, there are support delays and costly "work-arounds." In one case, the AN/TSC-94 Super High-Frequency Satellite Communications terminal was delivered from the contractor and placed in storage because it was not logistically supportable [6].

Captain Robert Mansfield developed an excellent case study on the logistics problems with the AN/TSC-94 Mr. Jones referenced. The case was part of an Acquisition Logistics Seminar at the Air Force Institute of Technology (AFIT) in June 1980. In his study he gave a chronological history of the AN/TSC-94 case. The main points of his study are summarized in the following paragraphs.

The Army awarded the AN/TSC-94 contract to RCA on 31 June 1976. The contract included six units to be delivered to the Air Force. The Air Force Electronics System Division (ESD) provided funds to the Army for

acquiring and provisioning for the six Air Force units. After the funds were provided, Air Force gave little attention to the program until problems began to develop. The first key problem identified was that the Sacramento Air Logistics Center (SMALC), the Air Force control point for the initial spares for the AN/TSC-94, did not attend the provisioning conference. As a result, SMALC had little idea of what types of spares would be needed, or how many would be required. Also, the provisioning list they received later was not very useful because the Army and Air Force use different methods to provision for new systems. Furthermore, SMALC did not understand much of the Army's data because it was in a format the SMALC did not recognize. Captain Mansfield concluded that the primary cause of these problems was that the Army and Air Force used different procedures to provision for and catalog spare parts.

Captain Mansfield, at this point in his case, focused on the differences in provisioning and cataloging procedures, which appeared to be the main problems in the AN/TSC-94 case. The Air Force screens the manufacturer's part numbers through DLSC to identify valid National Stock Numbers (NSN). This pre-screening occurs before the provisioning conference. Its purpose is to eliminate duplicate stock numbers, identify interchangeables and substitutes, and prevent adding duplicate items to the spares

inventory. The contractor usually helps with these procedures and also attends the provisioning conference. The Air Force then selects its initial spares at the conference.

The Army's normal procedures for provisioning are quite different. DLSC pre-screening of part numbers does not occur. The Army pre-screens all drawing numbers against its own records. Also, the contractor does not usually attend the provisioning conference. Rather than select spares at the conference, the Army waits until an item becomes a firm requirement. In the case of the AN/TSC-94, this process took 550 days for some items.

In addition to these differences in provisioning procedures between the Army and Air Force, Captain Mansfield also discovered some problems that resulted from poor interface between the two services. The Army Communications Electronic Readiness Command (CERCOM) was required to register the Air Force as a user with DLSC. This was necessary for Air Force units to get the required spare parts. Because of unfamiliar procedures, registration was delayed for several months. As a result, SMALC was unable to register the Air Force as a user of the spares for the AN/TSC-94. SMALC then had to use a long, mostly manual process to find out which parts had valid stock numbers assigned. At this point CERCOM was not aware of the SMALC's problems. Likewise, SMALC had no personnel dedicated to managing interservice programs.

Another problem arising from different procedures between the services appeared in assigning part numbers. The Air Force uses a stock class plus the manufacturer's part number. On the other hand, the Army uses drawing numbers. If a drawing changes, the part number changes even though the part remains the same. This often causes duplicate requisitions for many items. Attempts to correct this problem actually caused some valid spares requisitions to be cancelled. Due to uncertainties about quantities and items required, and unresolved questions about its role as the secondary inventory control activity (SICA), SMALC refused to accept shipments of spares from the Army. The spares were subsequently returned to CERCOM for storage.

Since the spares were now in Army warehouses, normal accounting procedures would require that they be paid for again upon issue. They were initially prefunded by ESD. The "work-around" solution to this dilemma was to assign a special holding code number to spares designated for Air Force use. However, some items failed to get coded properly and were used by the Army during a readiness exercise in Europe.

As a result of the problems summarized here, the Air Force Communications Command (AFCC) refused to accept the AN/TSC-94 because there were only enough spare parts to support two of the six terminals. The AFCC action was noted by Deputy Assistant Secretary of the Air Force for

Logistics, who demanded action to prevent such a problem from happening again (7:5-22).

The AN/TSC-94 case described by Captain Mansfield's study pointed out many specific problems that can develop in the multi-service acquisition process. Other evidence suggested that further research into the multi-service acquisition process is warranted. For example, one of the authors was involved in a similar situation during his tenure as the Satellite Supply Operations Officer for the NORAD Cheyenne Mountain complex. In this case the Army was the executive service for the AN/FTC-41, a secure data transmission system. This system was to be used by all services as an integral part of the Defense Communications System. Its purpose was to upgrade, by improving the capacity, speed, reliability, and maintainability, the old secure data transmission system at Cheyenne Mountain. The actual conversion began in May of 1980, a delay of one year from the original conversion date. The delay was caused by improper supply procedures, lost assets, and lack of initial spare parts. It appeared that these problems were caused by many of the same types of interface problems found in the AN/TSC-94 case.

In a study conducted at the Defense Systems Management School, Lieutenant Colonel James D. Haney examined three multi-service acquisition programs. In the first case, the Army was designated as the executive service and

each of the four major services were users. The program was designed to develop and maintain a standard line of mobile electrical generators for use throughout DOD. Colonel Haney identified several problems which developed in this program. Fluctuating requirements from the individual services caused some funding problems. Differing technical requirements submitted by individual services also caused some minor delays. Also, the support received from the using services was less than desired. There was a tendency on the part of the using services to view this as an "Army project." In spite of these problems, Colonel Haney judged this program a success. Prior to the project's establishment in 1967, there were more than 2000 different kinds of mobile generators in the DOD. This number was subsequently reduced to 42. The number of specifications covering mobile generator sets was reduced from 800 to 7. From 1967 to 1973 the number of technical manuals for generators was reduced from 4000 to 1000 and is projected to eventually be reduced to less than 100 manuals. Perhaps the best indicator of the success of this program was that the number of spare parts required was drastically reduced. As a result of the program only 2,129 different parts were required compared to 13,224 if each service acquired its own generators under the old procedures (4:1-19).

The successes of this program pointed out the potential for multi-service acquisition programs. To develop a system which will guarantee consistent similar successes as in this program provided further justification for this research.

In a second project, whose purpose was to acquire standardized firefighting equipment, the Air Force was designated as the executive service. Again, all four services would use the firefighting equipment. However, in this program, there was limited success and the project was abandoned. Colonel Haney cited several reasons for the lack of success in this program. First of all, Joint Operating Procedures, a key element in the success of the generator program, were never published. Colonel Haney was unable to determine exactly why, but he did state that there seemed to be difficulties obtaining services' concurrences on procedures. A second factor in this case was that the project was assigned to a lower organizational level than the generator project. Also, the Program Manager was only a Lieutenant Colonel. Colonel Haney felt that a higher rank would be required since the Program Manager would be dealing with representatives of all four services. Furthermore, this program did not receive near the guidance and direction from DOD as the generator program. Finally, the number of personnel assigned to this project was not adequate. Forty people were required yet only fourteen were

ever assigned compared to the eighty assigned to the generator project (4:19-23).

The final case Colonel Haney studied was a program to develop a surface container-supported distribution system. This project also achieved very limited success and was abandoned two years after it began. Colonel Haney again cited failure to publish Joint Operating Procedures and lack of using service support for the executive service, in this case the Army (4:23-24).

Also at the Defense Systems Management College, Mr. Mathew Wittman examined eight multi-service acquisition programs. The Navy was the executive service in each of these programs. In four programs, both the Navy and Air Force were using services. In the other four, the Navy, Air Force, and Army were all users. Mr. Wittman explained the background behind the multi-service acquisition concept and explained the basic process as he saw it. One key point he made was that each major service used a different organization structure when it was the lead service in a multi-service acquisition. The first problem Mr. Wittman identified was inter-service competition which detracted from the success of some programs. Another factor causing problems was personality conflicts. Also, for the less-than-major programs, funding was a major problem. In some instances the lead service would reprogram funds from joint programs into its own single service programs. This action caused delays

in the programs and also caused the participating services to reevaluate their commitment to the program. In spite of these problems, the personnel involved in these programs who were interviewed by Mr. Wittman were enthusiastic about the potential for multi-service acquisition programs (13:1-20).

The successes found in the mobile generator project pointed out the potential for multi-service acquisition programs. However, the evidence showed that oftentimes problems develop in multi-service acquisition programs which can delay employment of needed systems. Therefore, research which could identify and correct recurring problems in multi-service acquisitions in order to achieve consistent successes was justified.

In order to gain further insight into the multi-service acquisition process, the authors interviewed Mr. T. O. Jones, Deputy Director of Equipment, HQ AFLC. Among other responsibilities, Mr. Jones' directorate is responsible for managing ground communications and electronics equipment, equipment which is acquired by the Army for Air Force use under the multi-service acquisition concept.

Mr. Jones began by explaining what he saw as problem areas in the multi-service acquisition process between the Army and Air Force. His first point was that differences in provisioning procedures between the two services leads to problems of the kind found in the AN/TSC-94 and

AN/FRC-41 cases. For example, the Army lets a system mature before being concerned about spares, whereas the Air Force tries to estimate initial demand for spares and provision at that level before a system is deployed. Mr. Jones also stated that there is no clear policy for provisioning for less-than-major acquisition programs. He pointed out the need for research into methods to bridge the gap between Army and Air Force provisioning documents. His final point was that, although there is interest in the problems with multi-service acquisition programs as high as the Deputy Assistant of the Air Force level, research such as that proposed by the authors could be vital to improving the multi-service acquisition process (5).

A final justification for this research lies in the paucity of published information on multi-service acquisition programs. An extensive search of the Defense Logistics Studies Information Exchange (DLSIE) and the Defense Technical Information Center (DTIC) produced many studies on single service acquisition programs but very few studies on multi-service acquisition. Additional research on multi-service acquisitions should help program managers in this vital area.

Delimitation

Many possible multi-service acquisition areas could have been investigated. With four different services, each

able to act as either executive or using service, there were many possible combinations. An in-depth analysis of all combinations would have been impossible. Therefore, the primary focus of this research was on the situation in which the Army was the executive service and the Air Force was the user. Ground communications and electronics (CE) equipment falls into this category and was the focal point of this study. A final limitation was to restrict the study to less-than-major system acquisitions. This decision was made because the authors felt that major systems acquisitions, because of their importance and cost, received sufficient high level visibility. It was felt that this visibility would help preclude the types of problems found in less-than-major system acquisitions or at least facilitate the use of work around solutions. However, these delimitations do not necessarily limit the applicability of this research. Less-than-major acquisition programs involving other services were examined to determine if there were problems common to those the Army and Air Force had with the AN/TSC-94. Also, these other programs were examined with an eye toward techniques or procedures which could prove useful within the scope of this study. Finally, it was hoped that the study would result in principles which could be applied to other multi-service acquisition programs beyond the scope of this research.

In summary, this research attempted to identify and solve problems in the multi-service acquisition of ground communications equipment, less-than-major programs, in which the Army was the executive service and the Air Force was the using service. The lessons learned from this research could then be applied, where applicable, across the multi-service acquisition arena.

Research Objectives

The objective of this research was to identify problems which arise when the Army, as the executive service, acquires ground communications and electronics equipment, for Air Force use. Once the problems were identified, the research objective was to recommend changes to correct the identified problems.

Research Questions

1. What is the current system for the Army to acquire cummunications systems for multi-service use?

2. Are there deficiencies in the guidance provided by current directives for multi-service acquisition programs? If so, can they be identified?

3. Were the problems in the AN/TSC-94 unique to that program, or were those problems typical of multi-service acquisition programs?

4. What are the major problems encountered in the acquisition of ground communications equipment when

the Army is the lead service and the Air Force the user? Are these problems different from, or more severe, than those encountered in single service programs?

5. Can acquisition programs be identified which seem to be more effective or efficient than the AN/TSC-94 program?

6. If so, what differences were there, if any, in programs more successful than the AN-TSC-94?

7. How can the Army-Air Force interface during multi-service acquisitions of ground communications systems be improved?

CHAPTER II

RESEARCH METHODOLOGY

Research Problem Synopsis

Multi-service acquisitions, as defined in Chapter I, offer a great potential for reducing the life cycle cost of new systems. For example, the DOD mobile generator project cited earlier resulted in a reduction from 2000 to 42 of the number of mobile electrical generators used in the Department of Defense. In addition, the number of spare parts required to support these generators were reduced from over 13,000 to just over 2100.

However, the literature indicated that this type of success in multi-service acquisition programs appears to be achieved less often than desired. In fact, the same study which described the successful electrical generator program cited two other programs which were abandoned after achieving limited success.

Perhaps the best illustration of the need for research into the multi-service acquisition process was the case of the AN/TSC-94, a mobile ground communication system for which the Army had acquisition responsibility and the Air Force was to be a user. Because of many problems which developed throughout the program, the Air Force

Communications Command (AFCC) refused to accept the AN-TSC-94. Their reason was that there were only enough spare parts available to support two of the six terminals. As a result of the AFCC action, William B. Moseman, Deputy Assistant Secretary of the Air Force for Logistics, demanded that such problems be prevented from happening again. The research described here was undertaken to propose solutions to do just that.

Introduction to the Research Plan

This research was exploratory in nature. Because of the relatively recent development and use of multi-service acquisition procedures for less-than-major programs, a standardized and detailed data bank was not readily available. In addition, each service branch had its own way of classifying and storing data. Therefore, the research was limited primarily to a qualitative analysis of problems in multi-service acquisition programs. The main data acquisition process relied on personal and telephone interviews with key personnel involved with various less-than-major acquisition programs.

Development of the Survey Instrument

The survey instrument was a structured telephone or personal interview with open-ended responses. The open-ended nature of the interview was used to allow the

researchers to explore in depth the problems as well as to uncover new areas for additional future research.

Initial, exploratory research was conducted in order to determine the appropriate questions to include in the interview. Several of the persons actually interviewed later were questioned as to what possible areas to investigate might be. Army and Air Force people were among those who assisted the researchers in the development of the questionnaire.

The initial screening research identified six major potential problem areas. These were guidance, coordination, management information, funding, provisioning, and training. These six areas formed the core of the questionnaire, which is included at Appendix A. A demographic section and summary section were added to form the completed instrument.

Within the questionnaire itself, a basic rationale, or approach, was used. The basic format was to first ask, "How is a particular procedure accomplished?" Next, questions were asked to determine what problems existed. Finally, questions were included which asked how procedures could be improved. The first type of questions served three purposes. First of all, they allowed the researchers to gain additional knowledge beyond that published about multi-service acquisitions. Also, this type of question allowed the researchers the opportunity to evaluate how knowledgeable individuals being interviewed were. Finally,

depending on the variety of answers received, the researchers could perhaps identify nonstandard or conflicting procedures.

The second type of question provided information about problems encountered in multi-service acquisitions. The third type of question was used to allow interviewees to express their opinions on how multi-service acquisitions could be improved. Also, these responses were used by the researchers as a framework for recommended improvements.

The instrument was first prescreened by Air Force Institute of Technology (AFIT) faculty. In addition, the interview instrument was screened by the Directorate for Equipment, HQ AFLC and the Air Force Acquisition Logistics Division, Acquisition Branch (AFALD/LW) offices. The former office is responsible for monitoring ground communications and electronics equipment, which includes the AN/TSC-94. The latter office is directly responsible for monitoring provisioning for new systems.

The Data Bank

An attempt was made to interview a cross-section of personnel involved in the multi-service acquisition of communications equipment. In keeping with the scope of this research, primary emphasis was focused on systems acquired by the Army and used by the Air Force and/or other services. In an attempt to isolate problems across

the spectrum of an acquisition program, people interviewed ranged from GS-9 inventory managers to GS-16 division chiefs. The primary emphasis was on GS-11, 12, and 13 and 0-2, 0-3, and 0-4 middle managers. This group was selected because the preliminary screening research revealed that most of the multi-service interfacing occurred at these levels. This cross-sectioning allowed questioning of people who had experience supervising a broad spectrum of multi-service programs, as well as individual program managers, assistant program managers in charge of logistics, provisioners, item managers, and equipment specialists.

In addition to the cross-section across organizational lines, a cross-section of programs was also made. Three "super-organizations" involved with overall supervision of multi-service programs were sampled. These included the Defense Communications Agency (DCA), Tri-Tac, and the U.S. Army Satellite Communication Agency (SATCOMA). DCA supervises and has overall program responsibility for strategic satellite communications terminals. Tri-Tac manages communications linking devices such as telephone and message switching devices. USA SATCOMA is responsible for tactical satellite communications terminals. Within these overall areas, six specific programs were studied. From the DCA area of responsibility was chosen the AN/FSC-78.

The AN-FSC-78 is a strategic satellite communications terminal used to provide worldwide communications capability for the National Command Authorities. It is a part of the Defense Satellite Communications System (DSCS). It is a heavy, fixed position terminal, and there are currently eighteen terminals deployed worldwide. The AN-FSC-78 has much built-in redundancy to provide a high operational availability rate. It was initially deployed in 1977 (11).

Also, one specific program under Tri-Tac was studied, the AN-TTC-39. The AN-TTC-39 is a telephone switching device scheduled for deployment in August 1983. It is a tactical, mobile, modular switch which will be compatible with both older analog type communications equipment and state of the art digital equipment (3).

Four programs supervised by USA SATCOMA were also studied. These included the AN-TSC-94, AN-TSC-100, AN/MSC-40, and AN/MSC-64. Of these four programs, the 94 has already been deployed and the others are currently being developed.

The AN-TSC-94 is a tactical satellite communications terminal deployed in support of the Ground Mobile Forces (GMF) communication network. The terminal itself is mounted in a pick-up type vehicle and a disk antenna is towed behind. As mentioned in Chapter I, the AN-TSC-94 was initially unsupportable when first deployed in 1979.

There are currently six of these terminals being used by the Air Force.

The AN/TSC-100 is a follow-on to the AN/TSC-94. It is similar in appearance, deployment mode, and purpose. The major difference is a slightly larger disk antenna. Nearly 85 percent of the parts are common with the 94. It is scheduled for deployment in August 1981 (12).

The AN/GSC-64 is also a tactical satellite communications terminal currently being developed. Its purpose is to provide secure command and control communications for theater nuclear forces in Europe. It is designed to provide automated dissemination of highly specialized information for European theater commanders. Present plans call for the acquisition of 200 terminals, of which Air Force will own 26. The AN/GSC 64 can be truck mounted, but the Air Force versions will be rack mounted in fixed communication sites (12).

The AN/MSC-40 is a larger terminal whose purpose is to integrate and control several of the AN/GSC-64s. Five will be acquired for all services, and Air Force will get one of the five terminals.

These six programs were selected to provide a comparison of procedures, problems, and ideas among systems acquisitions using different management philosophies and supporting organizations. However, all systems were similar enough to provide a valid basis for comparison.

All six programs were for ground communications equipment, and in each case the Army was the lead service and Air Force a user. Two of the systems, the AN/TSC-94 and AN/FSC-78 have been recently deployed, while the others are in acquisition and scheduled to be deployed within the next five years.

In addition to DCA, Tri-Tac, and USA SATCOMA, several other agencies become involved in the acquisition of communications systems. Agencies from which interviewees were selected included the Sacramento Air Logistics Center (SMALC), Air Force's Electronics Systems Division (ESD), Headquarters Air Force Logistics Command (AFLC), and the Air Force's Acquisition Logistics Division (AFALD).

The research also extensively used the Air Force Acquisition Logistics Division (AFALD) lessons learned data bank. The lessons learned are maintained to provide data on problems encountered in the systems acquisition process. The researchers used these files to obtain selected cases for study as well as for detailed analysis of specific problems encountered.

Research Question Rationale and Methodology

Each research question is now restated and the rationale and methodology for each discussed.

1. What is the current system for acquisitioning communications systems in which the Army is the lead service and the Air Force is a user?

a. Rationale. This research question served two purposes. First, it gave the authors additional insight into the multi-service acquisition process. Second, it was intended to determine how well those involved understood the process and if there were significant differences between services as to the multi-service acquisition process.

b. Methodology. The following interview questions were used to answer research question number 1: 17, 18, 22, 23, 27, 28, 35, 36, 41, 45, 46.

2. Are there deficiencies in the guidance provided by current directives? If so, can they be identified?

a. Rationale. These research questions were used to determine exactly what guidance was available to program managers, DPML staff, and other key personnel as they provisioned for selected Army-Air Force communications-electronics systems. The purpose was to determine whether or not the formal guidance provided by DOD, Air Force, and Army regulations was sufficient to ensure effective and efficient provisioning for the systems involved.

b. Methodology. In order to answer research question number 2 the interview instrument was administered. Questions were specifically designed to determine

if the respondents felt the formal guidance was adequate. Questions were also asked to determine to what extent they used informal versus formal guidance as they managed their programs. Additionally, questions were asked to determine if program managers and other key people had received any training designed specifically for dealing with multi-service acquisition programs.

Next, all respondents were asked what deficiencies they perceived in the directives governing multi-service acquisition programs. They were also given the opportunity to present their ideas for improving the system.

The interview questions in section II, Guidance, and section VII, Training, were specifically design to answer research question number 2.

3. Were the problems in the AN/TSC-94 unique to that program, or were those problems typical of multi-service acquisition programs?

a. Rationale. This research question was posed to determine whether or not the AN/TSC-94 problems were typical of multi-service acquisition programs. If the research were to indicate that the AN/TSC-94 was an isolated case, then inferences concerning multi-service programs could not be drawn from this case analysis. Research Question 3 was intended to compensate for the lack of exploratory research and data in multi-service acquisitions.

b. Methodology. To answer this research question Captain Mansfield's case study was reanalyzed and specific problems listed. In addition, interviews were conducted with key people involved with the AN/TSC-94 program to determine if further problems had been identified since the earlier case study. The AN/TSC-94 problems were then compared to those discovered in research questions 1 and 2 to determine the problems common to the AN/TSC-94 and the other programs which were researched. The following investigative questions were designed to help answer research question 3: 11, 12, 15, 16, 26, 30, 39, 40, 44, 47.

4. What are the major problems encountered in the acquisition of ground communications equipment when the Army is the lead service and the Air Force is the using service? Are these problems different from or more severe than those encountered in single service programs?

a. Rationale. The purpose of this research question was to identify the major problems encountered in the acquisition of multi-service programs. This question along with research question number 5 were the key questions underlying the survey instrument. The second part of this question was used to determine if the multi-service aspect of the acquired systems studied here caused additional problems, or whether the problems encountered were typical of any system acquisition.

b. Methodology. Questions in each of the five major areas on the survey instrument were used to answer this research question. Specific questions were the following: 9, 11, 12, 19, 20, 22, 23, 25, 26, 30, 35, 39, 40, 44, 47, 50, 52, 56, 58. Part two of this question was addressed by survey instrument question number 16. Since all people interviewed had worked on both single service and multi-service programs, it was felt that question 16 by itself would adequately answer the research question.

5. Can acquisition programs be identified which seem to be more effective or efficient than the AN/TSC-94 program?

a. Rationale. Because many different specific programs and organizational patterns were studied, it was hoped that some programs could be identified which seemed to run more effectively than the 94 program. The preliminary research revealed that quantifiable data indicated success of a program would be impossible to obtain. Therefore, it was necessary to rely on subjective interpretation of interviewee responses.

b. Methodology. The primary method to evaluate success of a program was to compare or cross-tab responses to questions identifying problems by the particular program different interviewees were associated with. For example, if a particular program were more successful than the AN/TSC-94, there should be fewer

problems identified in response to interview question number 12. The specific instrument questions used for research question 5 were the same as for research question 4.

6. What differences were there, if any, in programs more successful than the AN/TSC-94?

a. Rationale. If programs were identified as more effective or efficient from research question 5, they would thus be examined for factors which might have led to this success.

b. Methodology. Programs which were subjectively determined to be more successful were examined for underlying causes of this success. Of particular importance here were the demographic questions cross-tabulated against different programs, as well as questions which asked how programs were accomplished or problems resolved. These questions were all of an explanatory nature. That is, they asked how a program was administered. Responses to the questions were cross-tabulated by system in an effort to identify procedures which could account for a more successful acquisition program. Questions used to answer research question 6 included: Section I, demographic data, 13, 17, 18, 22, 23, 24, 26, 27, 28, 32, 33, 35, 36, 38, 40, 41, 43, 45, 49, 51.

7. How can the Army-Air Force interface during multi-service acquisition of ground communication systems be improved?

a. Rationale. The combined multi-service experience of the 44 people interviewed exceeded 200 years. It was felt that by combining the suggestions for improvements of these people, recommendations could be made which would allow better management of future multi-service programs.

b. Methodology. Specific questions were asked which allowed the interviewee to offer suggested improvements to the multi-service acquisition process. Specific questions used to answer research question 7 follow: 29, 31, 34, 42, 48, 53, 54, 55, 56, 57, 58, 59.

Concluding Comments and Limitations

The limited data and limited previous research available for multi-service acquisition programs point out some limitations on this research. First, because the data obtained was very qualitative in nature and based heavily on personal interview, statistical data analysis is necessarily limited in scope. Second, because the data were obtained from different information systems (Army and Air Force), the researchers were forced to edit and interpret much of the data in order to make a standardized quantitative analysis possible. Third, because many people interviewed had been or would be evaluated by their job performance in these programs, an element of bias should be assumed inherent in many of the interviews.

However, these limitations do not negate the value of the research conducted. On the contrary, the research clarified that a system to provide concrete, standardized data by which to measure the success of future multi-service acquisition programs should be developed. The type of information system designed should be patterned so as to measure and record the success scores and demographic data used by the research plan described herein. This data base could also be used by program managers at phase points of the acquisition process to identify potential problem areas so corrective actions could be taken before the success of the program is affected.

CHAPTER III

PRESENTATION OF RESULTS

Introduction

In Chapter II, the seven research questions were summarized, and specific interview questions identified which were intended to help answer each research question. This chapter presents the results of the forty-four interviews which were conducted during a thirty-day period. Most were telephone interviews, but whenever possible, the interviews were conducted in person.

Organization of the results was aided by a computer program, developed by the authors, which allowed different sorts of the responses. This sorting allowed cross-tabulation of responses by system, functional area, interviewee, question number, etc. A copy of the FORTRAN program is included at Appendix B. Where appropriate, the data are presented in cross-tabulated form. However, in many cases there was either no significant trend evidenced by cross-tabulating, or the researchers felt cross-tabulated data would be of little or no value. In these cases, the data are simply presented in aggregated form.

Of the forty-four interviews, sixteen were with Army and twenty-eight with Air Force personnel. In some

cases, a person was unable to respond to a question due to inadequate knowledge of a particular area. The questionnaire was designed for a broad spectrum audience and it was expected that individual questions would not be relevant to all interviewees. Also, many questions could have multiple responses. Therefore, rarely will the total number of responses presented equal forty-four. When subgroupings are made, or when the number of responses varies significantly from forty-four, the actual number of responses are indicated on the appropriate table. The number of responses is labeled "n" on all tables.

The data are presented by section and in the same order as the questionnaire (see Appendix A). Where necessary, explanatory notes are included; however, no interpretation of results is presented in this chapter. Rather, an interpretation and analysis are presented in Chapter IV.

Section I--Demographic Data

1. What is your rank?

Rank of persons interviewed ranged from GS-9 to GS-15 for civilians and 0-3 to 0-6 for military. No significant trends were apparent and therefore further presentation of rank breakout will not be presented.

2. Interviewees' service codes indicated that most were in the communications-electronics or engineering career fields. No further presentation will be made.

Responses to questions 3 through 5 are presented in Table 3-1. The questions are repeated here for convenience.

TABLE 3-1

EXPERIENCE

Question No.	Average Years of Experience	Std. Dev.	Min.	Max.
3. Acquisition	9.17	6.93	0	30
4. Comm-electronics	12.24	10.2	0	30
5. Multi-service	5.53	5.64	0	27

3. How many years of experience do you have in acquisition?

4. How many years of experience do you have in comm-electronics programs?

5. How many years of experience do you have in working multi-service programs?

A large number of people interviewed had not been in acquisition for all of their careers, but had prior experience working with communications-electronics equipment. This experience was in non-acquisition functions such as equipment specialists, maintenance technicians, etc.

Table 3-2 shows a comparison of experience levels of Army versus Air Force personnel interviewed. Please

TABLE 3-2

AVERAGE YEARS OF EXPERIENCE BY SERVICE

Question No.	Army (n=14)	Air Force (n=26)
3. Acquisition	13.4	7.60
4. Comm-electronics	18.9	8.75
5. Multi-service	10.2	2.73

note that because random sampling procedures were not used, no statistical inferences are attempted.

Table 3-3 displays experience levels broken out by civilian versus military personnel.

TABLE 3-3

EXPERIENCE BY MILITARY/CIVILIAN BY SERVICE

	Average Years of Experience			
	Army		Air Force	
Question No.	Civilian (n=12)	Military (n=4)	Civilian (n=21)	Military (n=4)
3. Acquisition	15.2	6.8	8.4	2.8
4. Comm-electronics	19.0	16.8	9.5	6.5
5. Multi-service	13.2	5.0	5.2	2.6

Comments: Again, due to nonrandom sampling and small sample sizes, especially in the case of Army and Air Force military, statistical inferences are not possible. However, there is strong evidence that civilian

experience levels are higher than for the military in both services in all three categories.

Table 3-4 illustrates average years of experience by system studied. Again, note the restriction on statistical inferences, in this case due not only to the non-random sample but also due to small subpopulation sizes.

TABLE 3-4

AVERAGE YEARS OF EXPERIENCE BY SYSTEM

	System			
Question No.	AN/TSC-94 (n=13)	AN/TSC-100 (n=10)	AN/MSC-40+AN/GSC-64 (n=4)	AN/TTC-39 (n=11)
3. Acquisition	10.1	8.4	13.4	7.4
4. Comm-electronics	13.0	11.7	15.6	12.4
5. Multi-service	5.6	4.2	8.6	4.5

	AN/MSC-78 (n=2)	Others (n=12)
3. Acquisition	7.5	12.2
4. Comm-electronics	6.0	14.6
5. Multi-service	5.5	8.9

NOTE: Many personnel were involved with more than one program. This explains why the sum of n's is greater than from the previous table.

Comments: The previous analysis of questions 3 through 5 indicates that personnel interviewed were more experienced in comm-electronics than in acquisition, and least experienced in multi-service acquisition. There was also a wide range of experience, from a minimum of no experience in all three categories to a maximum of thirty years in acquisition and twenty-seven years in multi-service acquisitions.

Although statistical inferences may not be appropriately drawn, there is strong evidence that Army personnel interviewed were more experienced than Air Force personnel in all three categories. No statistical inferences are possible for experience levels by system, nor is there strong evidence of different experience levels by system, other than for the somewhat higher level of experience on the AN/MSC-40 and GSC-64 systems. However, this may very well be due to the very small (n=4) sample size.

6. What specific programs/systems have you been involved with? Are you currently working any of these programs? Which one(s) are multi-service programs?

Responses to this question indicated that interviewees had experience with many different types of programs. All had worked and were currently working on both single service and multi-service programs. All programs were communications or electronics systems. With the

exception of the Tri-Tac systems personnel (AN/TTC-39), all were involved in some way with satellite communications programs.

7. What are your responsibilities in this/these programs?

Responsibilities of the interviewees ranged from inventory managers to commander of the Multi-service Communications System Division at Ft. Monmouth, Jew Jersey. Most interviewees were middle level managers.

8. What is your formal position?

Table 3-5 shows the responses to this demographic data. Interviewees were generally placed in the "higher level supervisor" category if the position was primarily one of policy or guidance. Interviewees were placed in the middle level manager/supervisor category if their job was primarily one of policy execution or individual program (i.e., AN/TSC-94, 100, etc.) manager.

TABLE 3-5

INTERVIEWEES' FORMAL POSITION

Category	No. of Interviewees
Engineer	4
Middle Level Manager/Supervisor	14
Liaison Officer	3
Higher level Supervisor	14
Technician/Specialist	7
Other	2
TOTAL	44

9. Is/was your organization adequately manned?

Table 3-6 summarizes the responses to question 9.

Section II--Guidance

The questions in this section were asked to identify the major directives used by multi-service acquisition personnel and perceived deficiencies in the regulations. Next, questions were asked which would identify major problems in multi-service programs. Finally, interviewees were asked whether they felt multi-service programs caused more or different problems than single service programs.

During the interview process, it was discovered that personnel were answering both questions 12 and 14 in response to question 12, and that question 15 was not applicable. Therefore, this section will present only the results from questions 10, 11, 12, 13, and 16.

10. What directives do you use as formal guidance in your work on multi-service programs?

This question was asked in order to identify the most frequently used directives as well as to determine if certain important directives were being ignored. Of particular interest was how many respondents would mention the Standard Integrated Support Management System (SISMS) Manual. Tables 3-7 and 3-8 summarize the results of question 10.

TABLE 3-6

ADEQUACY OF MANNING

Organization	Area	Yes	No	Other
Sacramento ALC	Grade	9	3	2
	Experience	5	8	1
	Training	2	8	4
	Civilian/Military	3	-	11
	AFSC/MOS	4	1	9
	TOTALS	23	20	27
HQ AFLC	Grade	6	3	0
	Experience	7	0	2
	Training	4	3	2
	Civilian/Military	7	1	1
	AFSC/MOS	5	1	1
	TOTALS	29	8	8
Air Force Acquisition Logistics Division	Grade	2	0	1
	Experience	0	2	1
	Training	0	2	1
	Civilian/Military	2	0	1
	AFSC/MOS	1	1	1
	TOTALS	5	5	5

TABLE 3-6--Continued

Organization	Area	Yes	No	Other
Army Personnel	Grade	11	2	3
	Experience	8	5	3
	Training	7	6	3
	Civilian/Military	12	1	3
	AFSC/MOS	10	1	5
	TOTALS	48	15	17
Aggregate Totals (All Four Categories Combined)	Grade	28	8	6
	Experience	20	15	7
	Training	13	19	10
	Civilian/Military	24	2	16
	AFSC/MOS	20	4	18
	TOTALS	105	48	57

TABLE 3-7

FORMAL GUIDANCE USED BY AIR FORCE PERSONNEL
(n=26)

Guidance	No. of Responses	Guidance	No. of Responses
800-series regulations	10	PADs/PMDs	2
400-series regulations	11	AFM 67-1	5
AFLCR 400-21	10	DODR 4140 series	4
AFR 800-24 (SISMS)	11	AFLCR 65-5	2
"There is no guidance"	2	Other	9

NOTE: "Other" included the integrated logistics support plan (ILSP), joint operating agreements, statement of work, Mil-Std 1388-1, local operating instructions, and DODR 4000.19.

TABLE 3-8

FORMAL GUIDANCE USED BY ARMY PERSONNEL
(n=16)

Guidance	No. of Responses	Guidance	No. of Responses
AR 700-97 (SISMS)	10	Tri-Tac Documents	3
AR-700-99 (PICA-SICA)	3	DODI 1388.1	1
DCA Documents	4	DODI 1552 and 1661	2
AR 700-series	5	Other	3

NOTE: "Other" included the requirements for operational capability (ROC) and "other Army documents."

11. What specific deficiencies, if any, exist in the formal guidance?

This was a key question in that it was intended to help identify major problems and areas for improvement in the multi-service acquisition process. Because of the open-ended and qualitative nature of the responses received, no attempt is made here to tabulate numerical responses. Rather, the following paragraphs summarize the responses to question 11.

Summary of Guidance Deficiencies

The primary deficiency noted in the formal guidance referenced the SISMS. Eight respondents, five from the Air Force and three from the Army, said that the SISMS was too vague or general and did not give enough detailed procedural guidance. On the other hand, one Air Force respondent indicated the SISMS was too detailed and one felt it was correct in its current form.

The second most frequent deficiency mentioned was that the individual services are allowed to tailor DOD regulations such as DODR 1388.1, 1552, and 1661, resulting in non-standard procedures between services. Three Air Force and five Army respondents mentioned this deficiency. Four interviewees, two from each service, cited inconsistencies between services regulations, other than those caused by the "tailoring" problem.

Four responses, again two from each service, pointed out a lack of clear definitions of terminology in the multi-service guidance. Three interviewees, two from the Army and one from the Air Force, cited the lack of a single, integrated document for individual programs.

No other deficiency was mentioned more than once. Problems cited one time included the following:

1. Lack of a clear document outlining transfer of equipment from the executive to the lead service.

2. Formal guidance is provided for single service programs, but not for multi-service programs.

3. The PICA-SICA regulations (AFR 400-21 and AR 700-97) are not clear.

4. Computer interface guidance does not exist.

Two interviewees said there was no multi-service guidance. Six people felt that there were no deficiencies in the formal guidance. Of these, five were Army. Of these five, two did mention that although the guidance was adequate, implementation of the guidance was not being accomplished.

12. What specific difficulties did you or your organization encounter in your program?

Question 12 was very open-ended and therefore the complete responses are impossible to present here. However, several trends were apparent. Air Force respondents were most concerned with the provisioning process.

Fourteen different comments regarding provisioning problems were made. Of primary concern was the fact that the Army typically spends less time at the provisioning conference. While the Army only assigns SMR and IMC codes, Air Force accomplishes many more actions at the conference. Because the Army is running the provisioning conference using their procedures, Air Force actions are not accomplished. Another concern voiced was the fact that Air Force prescreens DLSC for part numbers while the Army doesn't. Also mentioned by three interviewees was a concern with the overall provisioning process. They felt that even though the Army provisioning conference is shorter, the Army's overall provisioning process is much longer. Two different interviewees mentioned a typical Army provisioning cycle to be up to 550 days, while Air Force's goal would typically be 120 days.

Only two Army respondents mentioned provisioning problems. One did voice concern over the Army's lengthy provisioning process, while the other confirmed the Air Force comments regarding the different provisioning conference procedures.

Closely related to the provisioning process are source, maintenance, and recoverability (SMR) code and maintenance repair concepts. Seven Air Force members cited differences between the services SMR coding procedures and maintenance concepts as major problem areas. However,

only one Army interviewee expressed concern in this area.

Another major area of concern was in communication or coordination between the services. Seventeen of the twenty-eight Air Force interviewees had communications or coordination problem comments. Five of the comments were that communications between services were generally inadequate. Four comments were that the coordination was adequate, but that timeliness of the coordination was not. Two respondents stated that their main problem was in providing SICA service (Air Force) requirements to the PICA service (Army). Other significant comments (those mentioned at least twice) were that parochialism led to a service handling its own needs first, and incompatibility of automated inventory management systems across services. Finally, two people commented that there was too much reliance on informal or undocumented agreements.

Of the sixteen Army respondents, nine cited coordination or communication problems. Two were general coordination difficulties. There were also two comments each on lack of documentation of informal agreements, computer interface problems, and difficulty with getting SICA requirements to the PICA service.

Funding was another area which received several comments. Four Air Force respondents cited funding problems as a major area causing difficulties. The Army

members also cited funding-related difficulties. Two comments were that the funds transfer procedures made tracking spares from initial purchase requests to delivery nearly impossible. Two others cited military interdepartmental purchase request (MIPR) procedures as causes of funds transfer problems. Finally, one said that funding in general was a major problem.

Standardization of procedures was the last area receiving more than two comments. One Air Force member cited individual service tailoring of DOD and other multi-service regulations as a problem. Another mentioned that he felt people were reluctant to use the multi-service regulations because of lack of familiarity with the terminology. Four Army comments also related to the standardization of procedures area. Two mentioned case-by-case tailoring of regulations while two others felt that DOD specifications (i.e., those in DODR 1552 and 1661) were not suitable for all services.

This presentation of the results has of necessity been presented in a general, summary format. However, many of the problems mentioned generally here were explored more deeply in other sections of the interview, and will be presented in subsequent paragraphs. The purpose of question 12 was to identify the major, common problems in multi-service acquisitions. The next question was asked

in order to determine, again in a general way, how personnel handled multi-service acquisition programs.

13. How did you resolve these problems?

This question was asked in order to determine how personnel handled program problems. Again, there were sixteen Army and twenty-eight Air Force people who responded. Although most interviewees responded with ways they had resolved problems in the past, some offered suggestions for improvements. These responses will not be presented here, but will be included in the presentation of data for questions numbered 56 or 58.

The most prevalent responses to this question were that problems have not been resolved, or that they have only been "worked around." Seven Air Force and three Army members stated that the problems they had encountered had not been resolved. Eight Air Force and three Army identified manual workarounds as their way of resolving difficulties. Of all respondents, seven said problems were resolved by elevating them to higher levels. Both services also relied heavily on phone calls, messages, and letters when attempting to resolve or work around problems.

Although not specifically in response to the question as worded, it was interesting to note that four people, two from each service, felt that higher levels of management did not appear to understand or appreciate multi-service programs. Other comments included use SISMS more,

use liaison officers at all major organizations, not just SATCOMA, and formal meetings which were preceded by sending a formal listing of problem areas to be discussed to all participants.

As mentioned before, responses to question 14 were generally just a continuation of question 12 and were included there. Also, question 15 was deleted early in the interview process and will not be reported.

16. In your opinion, do multi-service programs cause more, or different, problems than single service programs?

This question was asked in order to answer the research question, similarly worded. Because all respondents were experienced in both single and multi-service programs, it was felt that the responses here would be adequate for the research question (Table 3-9).

TABLE 3-9

DO MULTI-SERVICE PROGRAMS CAUSE MORE PROBLEMS THAN SINGLE SERVICE?

Organization	Yes	No	Other
Sacramento ALC	13	3	-
HQ AFLC	5	0	-
AFALD	2	0	-
Army	13	1	2
TOTALS	33	4	2

Comments: There is strong evidence that multi-service programs are more difficult to manage than single service programs. It is interesting to note that of the three negative Air Force responses, two were made by people not in acquisition, but in inventory management.

Section III--Coordination

Early analysis indicated that coordination and communication between services could be a problem area in multi-service acquisition. The questions in this section were asked in order to determine what specific coordination could be improved.

17. What kinds of agreements were reached between services before system acquisition decisions were begun?

The responses to this question were quite varied. There were no significant differences between Army and Air Force responses. Therefore, the responses will be presented in aggregate form. However, significant differences did appear based on system studied, and the results will be broken out by system. Table 3-10 presents the total responses in aggregate format while Table 3-11 presents the responses by system studied.

18. Is there a procedure for Air Force to evaluate future Army programs for possible Air Force use, before the Army has already begun its acquisition process? When

TABLE 3-10

TYPES OF AGREEMENTS REACHED PRIOR TO SYSTEM ACQUISITION

Response	Number of Responses
Don't know	11
None, or very few	8
Some agreements, but too late in program	5
PMD/PADs	4
Configuration Control Board Agreements	3
Joint Operating Agreements (JOAs)	6
Higher Headquarters Directives	2
Other	4

TABLE 3-11

TYPES OF PRE-ACQUISITION AGREEMENTS, BY SYSTEM

	Response					
System	Don't Know	None, or Too Few	Too Late	JOAs Early in Program	PMDs/ PADs	Early Program Direct From Higher HQs.
AN/TSC-94	3	8	2	-	-	-
AN/TSC-100	1	9	2	-	-	-
AN/MSC-40 and AN/GSC-64	-	-	-	4	-	-
AN/TTC-39	4	1	-	2	1	3
AN/MSC-78	1	-	-	1	-	1

does Air Force first have a chance to get in on equipment or logistics decisions?

This question was asked in order to determine if the Air Force is able to get involved soon enough in multi-service program decisions.

Of twenty-six Air Force responses to this question, eight were "don't know." Three of the fourteen Army respondents did not know. Five Air Force and two Army personnel felt there were no procedures for Air Force to evaluate future Army programs. Three Air Force interviewees said that agreements were made too late. Of those who answered that there was a procedure, answers as to how the early evaluation was accomplished were quite varied. Two Air Force personnel said there were procedures but didn't know how they worked. One mentioned that OMB Circular A-109 outlined procedures, but these were for major system acquisition. Two said they thought the evaluation occurred "somewhere at the staff level." One said review was the responsibility of ESD, another that it was AFLC/AQ's responsbility, and one felt the Air Force liaison office at Ft. Monmouth would have this responsibility.

Army affirmative responses were also quite varied. One cited the Air Force Ft. Monmouth liaison office, while another mentioned he thought there were joint working groups who handled this responsibility. One person mentioned the Joint Operating Agreements (JOA), while

another said JOAs were supposed to be set up but had not in fact been used.

One person from each service gave a different example of programs which had entered production before the Air Force became aware that it could fill an operational need.

The one area in which there appeared to be a clear procedure which both services understood was that of strategic satellite terminals. These are managed by DCA, and the AN/MSC-78 is one such system. Two Air Force and four Army personnel cited a DCA document which contains all research and development programs which may be reviewed by all services. However, one did say he felt the using commanders and logistics commands were not brought in on this review as much as necessary.

Again, a contrast between the AN/TSC-94 and AN/TSC-100 programs and the AN/GSC-64 and AN/MSC-40 programs surfaced. Three Army personnel mentioned that the 40/64 programs had early JOAs and other agreements while the 94 and 100 did not.

19. Do you feel the executive service/using service relationship is correct? Should a DOD level "super-SPO" be established for all multi-service acquisitions? If so, what responsibilities should the individual services maintain?

The purpose of this question was to acquire a feeling for how multi-service acquisition personnel might react to a single agency concept for managing joint programs, as well as the level of satisfaction with the current system. Table 3-12 displays the results of this question broken out by organization. Table 3-13 displays the same results by system.

TABLE 3-12

RESPONSES TO QUESTION 19 BY ORGANIZATION

	Is Current Relationship Correct?				Should There Be a "Super-SPO?"			
Organization	Yes	No	Don't Know	Other	Yes	No	Don't Know	Other
Sacramento ALC	4	5	2	1	5	4	2	2
HQ AFLC	-	1	-	1	2	-	-	1
Air Force ALD	-	2	-	-	3	-	-	-
AF TOTAL	4	8	2	2	10	4	2	2
Army	8	2	1	1	5	4	1	1
TOTAL	12	10	3	3	15	8	3	3

TABLE 3-13

RESPONSES TO QUESTION 19 BY SYSTEM

System	Is Current Relationship Correct?				Should There Be a "Super-SPO?"			
	Yes	No	Don't Know	Other	Yes	No	Don't Know	Other
AN/TSC-94	3	4	1	-	2	1	1	-
AN/TSC-100	2	5	-	-	3	2	1	-
AN/MSC-40 and AN/GSC-64	2	1	1	-	1	1	-	-
AN/TTC-39	4	5	1	-	3	2	1	-
AN/MSC-78	-	1	1	-	-	1	-	-

20. For multi-service programs, should the executive service be given all financial resources to accomplish both initial and follow-on support?

Because the initial research had indicated problems with funds transfers, this question was included in an attempt to find support for different or better funding procedures. The results are presented in Table 3-14.

Comments: The "other" category consisted primarily of "don't know" or "qualified yes" responses. Of those who responded "no," most mentioned either current statutes preventing it, or concern that the executive service might divert multi-service funds into other service programs.

TABLE 3-14

RESPONSES TO QUESTION 20 BY ORGANIZATION

	Should the Executive Service be Given All Financial Resources for:					
	Initial Support			Follow-on Support		
Organization	Yes	No	Other	Yes	No	Other
Sacramento ALC	8	-	-	7	1	-
HQ AFLC	4	-	1	3	1	1
Air Force ALD	-	1	-	-	1	-
AF TOTALS	12	1	1	10	3	1
Army	11	-	2	10	1	2
TOTAL	23	1	3	20	4	3

21. Should the Air Force "buy into" the Army logistics system or maintain its own initial spare parts inventory?

This question was written to see if there might be support for a supply arrangement similar to one used in the international logistics arena. Under cooperative logistics supply support agreements (CLSSAs), a foreign customer can buy equity in the DOD logistics supply system. However, it appeared that interviewees were responding only to the second part of the question--whether Air Force should maintain its own initial spare parts inventory.

Of twenty Air Force members responding to the question, twelve said that the Army should maintain the

inventory, but that because of difficulty keeping track of spares ownership, Air Force was maintaining its own spares inventory in order to protect its assets. Two said AF should maintain our own spares inventory. Two felt AF should buy into the Army supply system, while three said the "buying in" idea would be impossible because of PICA-SICA regulations.

Ten Army responses to this question were recorded. Four people said there should be a single DOD logistics system, three said the lead service should maintain all spares, two pointed out the PICA-SICA regulation preventing a "buying into" situation, while one said Air Force should buy into the Army logistics system.

22. After IOC, how are service modifications handled to insure continued standardization of parts and maintenance procedures?

During the initial research, there was occasional mention of a possible problem in this area. This question was intended to determine the magnitude of the problem. However, the responses indicated that through the use of configuration control boards chaired by the executive service, configuration control and modifications were handled quite efficiently. The only problem mentioned was that Air Force using organizations are not always on Army automatic distribution for publications. Sometimes a change will be made, but the Air Force users are not

receiving the technical manual changes. One specific example was given by an Air Force member of a change made by the Army which had a negative impact on the Air Force version of the equipment. One other comment mentioned that the Air Force using agencies are not always brought into the configuration control process. Although these were the only negative comments, they all came from higher level supervisors.

23. What problems arise because of different maintenance concepts between services? How are these conflicts resolved?

During the course of the interviews, it became apparent that this question needed to be broken down into smaller parts. Respondents had difficulty answering the multiple problems. The results presented here are in general terms for the sake of brevity.

First of all, there was a near consensus that having different numbers of level of repair between Air Force and Army was a major problem area in multi-service programs. The fact that these different levels resulted in different source codes between services was the most often cited problem, with eleven responses. A key problem also cited was that currently it is not possible for an Air Force item to be repaired at Army intermediate repair facilities. Of those who commented, all felt the maintenance repair levels differences were not adequately

resolved in early acquisition cycle phases. A few respondents felt the different maintenance concepts should not be a problem. Several, however, felt conflicts did exist and had not been resolved.

Section IV--General Information

This section was used to explore further general management approaches used in multi-service acquisition programs. The primary areas of concern were with exchange of information between services, program review procedures, and measures of success.

24. What types of information do you require to perform your role in multi-service acquisition programs?

This question was merely intended to introduce the basic subject of section four. Responses varied widely depending upon the respondent's position. Results were not significant and are not reported.

25. Is the existing management information system adequate to provide this information across services?

This question's purpose was to explore the adequacy of both manual and automated management information systems in the multi-service environment. Table 3-15 displays the responses to question 25.

Of the five "yes" responses, all were referring to non-automated exchanges of information between services. Many respondents had additional comments regarding the lack

TABLE 3-15

IS CURRENT MANAGEMENT INFORMATION SYSTEM ADEQUATE?

Organization	Response			
	Yes	No	Don't Know	Other
Sacramento ALC	2	10	1	-
HQ AFLC	-	5	-	1
Air Force ALD	-	2	-	-
Army	3	11	1	1

of computer interface between services. Three people specifically mentioned that transmittal of messages was a problem. Two people suggested that organizations involved be provided access to the ARPA net and one suggested that prime contractors also be placed on ARPA. ARPA is a digital/analog communications system using CRT displays. When used, it allows people to display written communication on a screen. Changes can be made interactively. Once agreement is reached, the ARPA terminal then provides written copy of the display, thus providing quickly and efficiently formal documentation of the verbal agreements reached to all involved parties. One interviewee cited the DLA supply computer system and suggested a similar system for multi-service supply organizations.

26. Was there sufficient communication with the other services?

This question was intended to determine how well the services were able to communicate in multi-service acquisitions. Table 3-16 displays the responses by organization and Table 3-17 displays the same question broken out by system.

Of those who answered "no" to this question, four cited inability to get TDY funds for conference attendance as a major problem. There were also four comments which referenced "downward" communications as a problem. In other words, these respondents felt there was good communication between services at higher organizational levels, but that agreements reached were not transmitted to lower organizational units within services.

27. Describe the way you coordinated with the other services in your multi-service programs.

The purpose of this question was to learn how people coordinated with the other services in multi-service programs. Table 3-18 displays the results of this question. In this case, only three organizational breakouts were made. As on previous charts, Sacramento ALC and Army responses are displayed. However, in the case both Air Force Acquisition Logistics Division and HQ AFLC are aggregated.

In addition to the responses presented in Table 3-18, other significant comments were recorded. Scarcity of TDY funds was again mentioned. Also, some people

TABLE 3-16

WAS COMMUNICATION SUFFICIENT?--BY ORGANIZATION

Organization	Response		
	Yes	No	Qualified Yes
Sacramento ALC	5	7	1
HQ AFLC	1	5	-
Air Force ALD	-	-	1
AF TOTALS	6	12	2
Army	6	3	3
TOTALS	12	15	5

TABLE 3-17

WAS COMMUNICATION SUFFICIENT?--BY SYSTEM

System	Response		
	Yes	No	Qualified Yes
AN/TSC-94	1	7	1
AN/TSC-100	-	5	1
AN/MSC-40 and AN/GSC-64	4	-	-
AN/TTC-39	5	3	2
AN/MSC-78	1	1	2
TOTALS	11	16	6

TABLE 3-18

METHODS OF COMMUNICATION BETWEEN SERVICES

Method of Communication	Organization: Sacramento ALC	Organization: HQ AFLC/ AFALD	Organization: Army	Total
Telephone	2	11	4	17
Letter	2	4	2	8
Message	2	3	1	6
Meeting	6	6	5	17
Formal Program Reviews	2	2	1	5
Liaison Officer	1	1	-	1
Logistics Forum	1	-	-	1
Formal Work Groups	1	1	-	2
Other	1	-	-	1

mentioned the need to use more formal and fewer informal communications. Finally, one acquisition manager at Sacramento ALC mentioned that too often messages did not have the office from which they were sent readily identifiable. This caused problems with return messages or requests for clarification.

28. Did you know who to contact in the other services for coordination? How did you find the "right person" to coordinate with?

The authors found great difficulty in locating people who were involved with specific systems or

functional areas in the conduct of this study. It was felt, therefore, that finding correct points of contact between services could be a problem. This question was designed to determine the nature and magnitude of this problem and how people resolved coordination problems.

Table 3-19 displays the results of the first part of question 28. Note that HQ AFLC and Air Force ALD are again listed together.

TABLE 3-19

DID YOU KNOW WHO TO CONTACT FOR COORDINATION?

Organization	Yes	No	Initially no, later yes	Not always
Sacramento ALC	5	2	5	1
HQ AFLC/AFALD	5	1	-	2
Army	8	-	5	1
TOTALS	18	3	10	4

Table 3-20 shows how people found the correct person to coordinate with. There were no significant differences by organization. Therefore, the data presented are in aggregate format.

29. How could coordination between services be improved?

This question was asked in order to pool all ideas of the interviewees as well as to provide background

TABLE 3-20

METHOD FOR FINDING PERSON TO COORDINATE WITH

Response	Number of Responses
Numerous phone calls	10
Prior experience or contacts	8
Periodic logistics reviews	4
Initial program meetings	3
Through Air Force Electronic Systems Division DPML	2
Air Force Liaison Office at SATCOMA	2
DCA	2
Ft. Monmouth Customer Service	1
SATCOMA Logistics Forum	1
Other	3

for the researchers' own suggestions. Responses are separated by service and presented in Table 3-21.

30. Are the LAR/LOGCAP formats adequate? If not, what is lacking?

The LAR is the Air Force's logistics assessment review. The LOGCAP is the same Army review. This question was asked in order to determine the adequacy of these review formats, as well as to determine if one or the other might be more appropriate for multi-service logistics review briefings. During the time of the research, two

TABLE 3-21

WAYS TO IMPROVE COORDINATION

Response	Service		Total
	Air Force	Army	
No improvement is needed	3	3	6
Get more people to early program meetings	3	1	4
Establish Army liaison office at Sacramento ALC	2	3	5
More standardization of operating procedures between services	3	1	4
Periodic exchange of organizational charts and program office personnel charts	3	1	4
Put contact point on all message traffic	2	1	3
More timely exchange of information	1	1	2
More TDY funding	2	-	2
Other	-	3	3
Don't know	-	-	3

multi-service programs' logistics were briefed at the same time. In one program, the Air Force was the executive service, and the LAR format was used. The other program, the AN/TSC-100, was an Army acquired program. For the AN/TSC-100, LOGCAP was used to brief logistics. The purpose was to determine which format might be more appropriate. At the time this research was published, the formal results of this "brief-off" had not been published. However, many of the interviewees had either attended or received preliminary reports. Many of their responses are included here. Table 3-22 displays the results from question 30.

TABLE 3-22

ARE LAR/LOGCAP BRIEFING FORMATS ADEQUATE?

Response	Service		Total
	Air Force	Army	
LAR is adequate	4	4	8
LAR not adequate	2	2	4
Not familiar with LAR	12	4	16
LOGCAP is adequate	3	8	11
LOGCAP not adequate	1	2	3
Not familiar with LOGCAP	13	1	14

Three people who responded felt the LAR/LOGCAP formats were adequate at the level given, but different formats were needed for different organizational levels. Included in both service responses that the formats were adequate were six comments that they were adequate for each service's own use, but not adequate for multi-service use. Three others said that the briefings were adequate but too often the briefings were not attended by both services. Other comments on the briefing formats were that they tended to present only "good news," and not the complete logistics picture. Also, some felt the formats were too inflexible, and as a result important problem areas could not be presented.

31. Should the program manager or someone else be responsible for briefing logistics items at LOGCAP/LAR reviews?

During the preliminary research, there appeared a philosophical difference about who should be responsible for logistics items at program reviews. Some felt that logistics personnel should brief logistics items because of their functional expertise. Others felt the program manager should because that would force him to pay greater attention to logistics decisions during system acquisition. This question was asked to determine exactly how much support there might be for each position. Table 3-23 presents the findings.

TABLE 3-23

PERSON WHO SHOULD BRIEF LOGISTICS ITEMS
AT PROGRAM REVIEWS

	Response		
Service	Program Manager	Logistics Personnel	Don't Know
Air Force	7	6	5
Army	7	2	2
TOTALS	14	8	7

32. What feedback do you receive on your program?

During the course of their studies at AFIT, the researchers on many occasions heard briefings or were involved in discussions that centered on problems inherent in a system where one organization is responsible for acquiring a system and others responsible for supporting a system after IOC. One problem discussed was how to inform people involved in acquisition of later supportability problems. Question 32 attempted to find out if there were either formal or informal ways for this feedback to be provided. Table 3-24 displays the results.

Comments: Of thirty-one responses, twelve were that little or no feedback was received after IOC. The interviewees made no comment on long-term feedback. Apparently there is no or very little feedback provided to acquisition personnel long after IOC.

TABLE 3-24

FEEDBACK RECEIVED ON PROGRAMS

Response	Sacramento ALC	HQ AFLC/ AFALD	Army
None, or very little	8	-	-
Only if major problems occur	4	2	-
Some feedback on informal basis	-	3	-
DCA reporting procedures on strategic terminals	-	-	4
Some feedback since acquisition remains responsible for program until well after IOC	-	-	3
Army follow-on evaluation team feedback	-	-	2
From SATCOMA liaison office	-	-	1

33. How do you measure success in your job?

This question relates directly to the preceding question in that the authors suspected that acquisition personnel might be more concerned with short-term measures such as cost or schedule milestones and less concerned with logistics supportability downstream. Table 3-25 displays the results of this question.

34. Is there a "life history" of an acquisition? Where would this information be located? If not, should there be? What should be included?

TABLE 3-25

MEASURES OF SUCCESS

	Measure			
Organization	IOC	Cost and Schedule Milestones	Supportability (ISSL Fill Rates, MICAP, System Availability, etc.	Other
Sacramento ALC	1	4	9	1
HQ AFLC	-	1	3	2
AFALD	-	-	2	-
AF TOTALS	1	5	14	3
Army	6	7	4	2
TOTALS	7	12	18	5

The primary purpose of this question was to help the authors find hard data which could be used to measure the success of a program. It had been the authors' attempt during the preliminary research to gather data on different systems which would be measures of the supportability of the system. However, no such data was found. It was hoped that question 34 would uncover some type of formalized data collection system which could be used to compare different systems. However, none was found during the entire interview process. Table 3-26 displays the results from question 34.

Persons who responded "yes" were asked where such information would be kept. Two said in the systems

TABLE 3-26

IS THERE A LIFE HISTORY OF AN ACQUISITION?

Response	Organization				
	Sacramento ALC	HQ AFLC	AFALD	Army	Total
Yes	-	-	-	4	4
No	3	2	-	5	10
I think so but don't know where	2	-	-	1	3
Yes, but not centrally located. Rather, separate parts kept by functional area offices	2	2	-	5	9
Don't know	3	3	2	-	8

program office, three said by the program manager, two said in the AFALD lessons learned file, and five said in personal, individually kept "Pearl Harbor" files.

Many people commented on the lack of or limitations of such a life history. The primary problem appeared to be that to keep such a central history would require too many manhours and be too expensive. Two people gave specific examples of problems caused after personnel changes, due to the lack of a life history of the acquisition. One person mentioned that the Army does not give much credence to the AFALD lessons learned file because too little is entered there. Of those who responded, eight people said

there should be a life history kept on acquisitions and two said no. There were no meaningful responses to the question, "What should be included?"

Section V--Funding

The initial research as well as the Mansfield case study pointed out that transfer of funds between services was a significant problem area. The questions in this section were asked in order to first determine how funds are actually transferred. Then, questions were asked to determine what specific problems exist in funding. Finally, questions were directed toward seeking solutions to the funding problems.

35. How is the funds transfer problem handled?

The wording of this question as initially presented caused some difficulty for the interviewees. After one or two interviews it became apparent that the correct question was, "How are funds transferred in multi-service acquisitions?" This is how the question was actually presented in all except the early interviews, and results will be in terms of how funds are transferred.

Many people were not familiar with funds transfer procedures. Rather than present all responses, this question's responses will be limited to those from respondents familiar with funds transfer procedures.

35. How are funds transferred between services--

For end systems?

For initial spares?

For follow-on spares?

Responses to this question were quite varied and indicated much confusion on the part of the respondents as to how funds are actually transferred in multi-service acquisitions. Rather than attempting to present all of the responses here, as in previous sections, the authors felt it would be more useful to present information gathered from sources felt to be most knowledgeable in funding procedures. Therefore, a synopsis of the funds transfer procedures is presented, rather than a complete presentation of all responses.

Funds transfer procedures vary depending on the type of multi-service program in question. Programs under the direction of the Defense Communications Agency (DCA) are especially different from others. DCA administers strategic satellite communications terminal programs. The AN/MSC-78, one of the programs studied in this research, is one managed by DCA.

Initially DCA funding was provided by the services based at a mutually agreed-upon percentage. Problems developed when budget cuts in one service reduced funding below that necessary for the program. Today each service has its own portion.

The Army is responsible, as the lead service, for acquiring ground satellite communications equipment. The Air Force is the lead service for space-borne aspects of the satellite communications equipment, and Navy is the lead service for ship-borne components. Assets belong to the JCS and can be reallocated by DCA with JCS approval. Under this current arrangement the lead service funds for equipment under its area of responsibility.

Under the DCA arrangement, initial spares are also funded by the lead service. Excluded from initial spares funded by the lead service are those spares which are unique requirements to a particular service. An example of this exclusion would be spares required by the Air Force to fill its War Readiness Spares Kits (WRSK). For multi-service systems not under DCA jurisdiction, the funds transfer procedures are different. These systems would include the tactical satellite communications terminals. Examples in this study would be the AN/TSC-94 and 100, and the AN/MSC-40 and AN/GSC-64.

End items are normally funded through each services' Staff. In the case of the Air Force, items are funded by the Air Staff through the product division and the program office. Initial spares are pre-funded by the using service through a military interdepartmental purchase request (MIPR). Follow-on spares are normally handled by funded requisitions. Occasionally, if an item is unavailable due

to long lead time or extensive back orders, the lead service will request a MIPR. A MIPR results in a transfer of funds prior to the items being placed on order. The transfer of funds for a funded requisition occurs when the item is shipped.

Three Air Force and one Army respondent discussed the problems caused by the lack of a computer system to determine asset status and the need for a MIPR versus a funded requisition. The Army does not normally prescreen MIPRs. That is, Army does not look at the items on the MIPR and determine whether or not that item is already on hand. Therefore, if the Air Force sends a MIPR, the Army will attempt to buy the item even if the asset is already available. In fact, one respondent cited a case where the Army went to a contractor and attempted to purchase equipment which had been furnished by the government to that contractor.

36. How are Army and Air Force requirements integrated into one requisition objective? Does different funding level/concept result in one service paying more than its fair share?

The first part of this question was aimed at determining how PICA requisition objectives are determined for multi-service assets. The answer to this was to provide insight to the second part of the question. The researchers were not able to determine the mechanics of requirements

determination, but through the responses were able to determine that service funding concepts and decisions can have a dramatic impact on supportability.

One case cited was the Navy F-5 aircraft. The Navy funded spares at 100 percent while the Air Force funded its T-38 spares at 38 percent. This action resulted in the Air Force using the parts, leaving the Navy short despite its 100 percent funding.

One of the Tri-Tac subsystems was also cited as an example. On this system the Navy was not funding spares at all with the Air Force funding its portion at 100 percent. As a result, the Air Force was considering the use of a special Air Force holding account to protect its assets.

37. How should the Air Force fund preoperational spares and initial provisioning when follow-on support is to be provided by the executive service?

The purpose of this question is to solicit possible solutions to the funding mechanics problems discussed in question numbers 35 and 36.

The majority of respondents who voiced an opinion felt that the executive service should be provided all the necessary funds to procure initial spares. Differences of opinion occurred on the issue of Air Force WRSK items. The Air Force sees these as initial spares; the Army generally perceives them as service unique. The Air Force

argument was that WRSK items are not held inviolate but are used to support Army requirements when needed. There were two respondents who felt that the present system was adequate.

38. How does the Air Force handle prefunding of Army items when it is the executive service?

Only three respondents replied other than don't know. One Air Force interviewee stated that the Air Force Computer Supply System at Sacramento allows the Army to submit unfunded requisitions for its prefunded initial spares. The Air Force system is able to recognize these requisitions thereby preventing the Army from being double charged. Another Air Force response was the comment that when the lead service provides all money for initial spares, the using service tends to overstate requirements which result in an overbuy and unnecessary use of lead service funds. The Army respondent stated that before the Air Force goes on contract it requires Army dollars which it obtains on a MIPR.

39. What approach should be taken on the one item per MIPR problem?

During the preliminary research, it was discovered that the Army had wanted Air Force to provide a separate military interdepartmental purchase request (MIPR) for each spare item purchased. The purpose of this question was to determine why such a laborious procedure existed and how

this problem should be resolved. As explained by Army and Air Force officials familiar with Army MIPR procedures, there is a reason why Army wanted only one item on each MIPR. Apparently, if multiple items are placed on one MIPR, it is impossible for the Army automated system to keep track of those items ordered, that is, quantity ordered, when due in from vendors, etc. Therefore, the Army was forced to rework a MIPR with many line items into a document, called a "King Pron," by which each item could be tracked. If Army were able to get Air Force to send a separate MIPR for each item, then the automated system could keep track of the purchases. The time-consuming manual workaround could be avoided. Air Force personnel at Sacramento, however, were reluctant to provide separate MIPRs for each item because of the work load involved. The responses to question 39 seem to indicate a lack of understanding by Air Force personnel of the Army problems. Table 3-27 displays responses to question 39 by service.

40. Is specific item integrity of prefunded spares maintained? Should it be? Or should the executive service be given the requirement to pay for initial provisioning and payment sent when the item is received?

This question was asked to determine if spares which had been paid for by each service could be identified as belonging to that service. In the AN/TSC-94 case study there was evidence that this integrity had not been

TABLE 3-27

WHAT SHOULD BE DONE ABOUT ONE ITEM PER MIPR PROBLEM?

Response	Air Force	Army
Not aware of problem	11	1
We don't use one item per MIPR and have had no problems	4	-
Computer system incompatibility problem should be resolved	2	1
Aware of and explained Army's problem	2	9
Army doesn't prescreen MIPRs, hence equipment already on hand may be ordered	-	2

maintained. As a result, Air Force either was not able to get spares when needed, or ended up paying twice for initial spares. The second part of the question was to determine if personnel felt item integrity of spares should be maintained. The results of part one are shown in Table 3-28. Table 3-29 displays the results of part two.

Comments: Both services agreed that specific item integrity was not maintained. There was considerable disagreement between services as to whether it should be. Air Force appeared to feel strongly that it should be, while Army felt not.

TABLE 3-28

IS ITEM INTEGRITY OF PREFUNDED SPARES MAINTAINED?

	Response			
Organization	Yes	No	Other	Don't Know
Sacramento ALC	2	8	1	2
HQ AFLC/AFALD	1	1	2	4
Army	1	4	1	2

TABLE 3-29

SHOULD ITEM INTEGRITY OF PREFUNDED SPARES BE MAINTAINED?

	Response			
Organization	Yes	No	Other	Don't Know
Sacramento ALC	6	1	1	1
HQ AFLC/AFALD	1	2	2	4
Army	2	5	-	2

The responses to the final part of the question, "should the executive service be given the requirement to pay for initial provisioning and payment sent when the item is received?" are presented below.

The majority of those who responded to the final part favored having the lead, or executive, service buy the initial spares and then be reimbursed by funded requisition when the items were shipped. Respondents did suggest some problems with, and perhaps some resistance to, this

approach. Problems cited included the following:

1. Computer supply system incompatibility between services would make tracking of spares and accounts difficult.

2. The using service might overstate their requirements because they are not prefunding for spares.

3. Cancelling out of a program by a using service could leave the executive service with unneeded parts inventory.

4. Late involvement inhibits timely forecasting of requirements and needed funds.

41. Who physically holds the assets? Who should?

These questions were used to continue the investigation into how inventories of spares are kept. The second part of the question was asked to determine interviewees' feelings on how inventory should be kept. Table 3-30 displays the results of question 41.

Comments: Of the fourteen Air Force personnel who felt the executive service should store assets, four did mention that there would first have to be a way to insure that spares purchased by the using service could be identified if the executive service were to maintain the inventory.

Of the six total responses saying the executive service did hold the assets, four were involved in the AN/MSC-40 or AN/GSC-64 programs.

TABLE 3-30

OWNERSHIP OF ASSETS

Service	Who Holds Assets?			Who Should?		
	Executive Service	Using Service	Don't Know	Executive Service	Using Service	Don't Know
Air Force	4	10	4	14	2	3
Army	2	2	2	3	1	2
TOTALS	6	12	6	17	3	5

42. What changes would you recommend in the funding structure?

As in previous sections, this question was asked in order to allow those personnel involved in multi-service acquisitions suggest improvement, in this case for funding. Table 3-31 displays the results for question 42.

Of those who said that the executive service should fund for all spares requirements, most meant that the executive service would be reimbursed as spares were ordered by means of funded requisitions. However, two respondents, both from the Army, said the executive service should simply pay for all spares and free issue them as needed.

AD-A108 647 AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL--ETC F/G 5/1
PROBLEMS IN THE MULTI-SERVICE ACQUISITION OF LESS-THAN-MAJOR GR--ETC(U)
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UNCLASSIFIED AFIT-LSSR-22-81 NL

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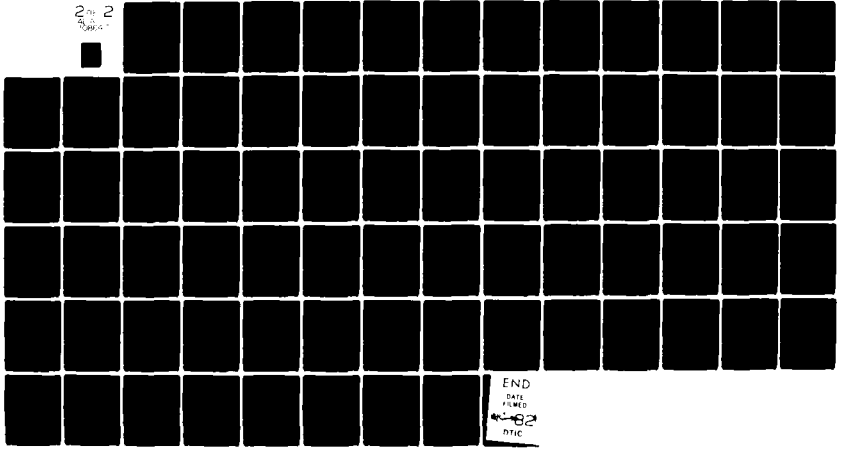

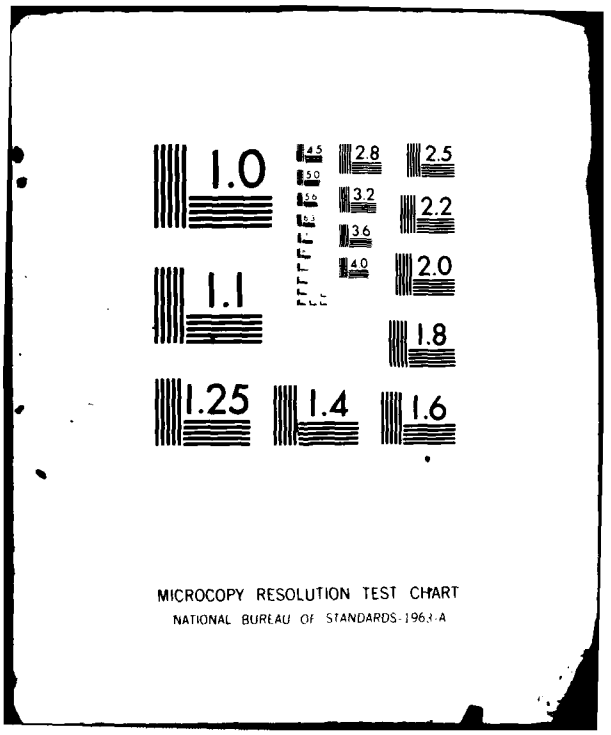
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1.1
1.25
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1.6
1.8
2.0
2.2
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3.2
3.6
4.0
4.5
5.0
5.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

TABLE 3-31

SUGGESTED FUNDING IMPROVEMENTS

Suggestion	Number of Responses by Service	
	Air Force	Army
Executive service should fund for all spares requirements	10	4
Using service should provide its annual requirements to executive service sooner	1	2
Improve up front funding procedures	-	2
Allow more flexibility in funding*	1	2
Allow multi-year funding for multi-service programs	-	2

*By this, the respondents meant that money should be allocated to an entire program, rather than budgeting for a fixed number of end items in one year.

Section VI--Provisioning

The questions in this section were used to determine differences between Air Force and Army provisioning procedures, problems that might be caused by these differences, and ways to improve provisioning procedures on multi-service programs. Question 43 was asked so that the researchers could determine the respondents' level of involvement in the provisioning process. Only those who felt they had significant input to or knowledge of provisioning were questioned further.

44. What problems exist in cataloging on multi-service programs?

Only thirteen Air Force and five Army personnel were familiar enough with cataloging procedures to respond to question 44. Five Air Force and two Army interviewees felt the Army cataloging process was too slow. Three Air Force and two Army respondents mentioned that Army pre-screens part numbers after the provisioning conference. As a result, some codes change, and when the Air Force tries to register as a user, registration does not occur because the part has not been stock numbered. A related problem mentioned was that the Army fails to provide feed-back on post-provisioning conference actions to the Air Force. Two Air Force and one Army member mentioned this problem. Three Air Force inventory managers complained the Army uses codes the Air Force did not recognize.

An acquisition manager at Sacramento commented on the basic philosophy differences he felt might underlie cataloging problems between Army and Air Force. He stated that Army, as well as Navy, have supply systems that can find parts based on part numbers. On the other hand, Air Force relies very heavily on national stock numbers. Because of this philosophical difference, Army seems less concerned with cataloging than Air Force.

45. How does the Army forecast initial require-ments to push assets out to the field?

During the preliminary research, the authors were informed (by Air Force personnel) that the Army used a "push" philosophy to get spares to operational units acquiring a new piece of equipment. That is, initial spares were sent with the end equipment, rather than basing spares on forecast or historical usage data. The authors hoped, through question 45, to verify this procedure as well as to determine how well Air Force logisticians understood Army provisioning procedures.

Fifteen Air Force respondents did not know how Army forecasts its requirements. Two said the Army did not forecast very well, three said they used MOD-METRIC (a computer package used to forecast spares requirements) and two cited the "push package" concept described earlier.

Army responses to the same question showed marked differences. Five respondents referred to computer models. However, MOD-METRIC was not mentioned. Rather, three mentioned forecasts were prepared by Malcolm Stewart, Inc., a management consulting firm, one mentioned the SESAME model, and one cited the Commodity Command Support System (CCSS). All of these were computer forecasting models.

Of particular interest was the fact that four high level managers were emphatic in pointing out that the Army no longer uses the "push package" concept. Rather, they explained that the developing agencies provide a list of recommended spares to the using agency. The using

agency then buys the spares through funded requisitions, then orders the end items when it feels adequate spares are available to support the system. One person mentioned this procedure has occasionally caused problems. For example, a using agency may want a system before it has acquired the recommended spares. It gets the system but then is unable to support it because spares are not available. Incidentally, two did say that they felt the "push package" concept was superior to the new approach.

46. What differences are there between Air Force and Army provisioning procedures?

This question sought to determine philosophical or procedural differences between the services' provisioning procedures which could lead to problems in provisioning.

Eight respondents, six from Air Force and two Army, said the Army provisioning cycle was much slower. Four Air Force and two Army personnel cited the fact that Army provisions before production contract award, usually in the full-scale development phase of the acquisition cycle.

Seven Air Force personnel mentioned that the Army does not prescreen parts against the Defense Logistics Supply Center (DLSC) as Air Force does. Four also cited the fact that Air Force catalogs at the provisioning conference while Army does not. No Army interviewees mentioned these last two differences.

Four said that Army uses Logistics Support Analysis (LSA) while Air Force does not. Two of these responses came from each service. Finally, of our respondents, three from the Army, felt that Air Force computations resulted in higher numbers of spares than Army computations.

47. Do these differences cause provisioning and follow-on support problems for multi-service programs?

The purpose of this question was to determine if different provisioning procedures between services were felt to cause problems. Table 3.32 displays the results of question 47 by organization.

TABLE 3-32

DO PROVISIONING PROCEDURAL DIFFERENCES CAUSE PROBLEMS?

	Response				
Organization	Yes	No	Yes, but can be Managed	Don't Know	Other
Sacramento ALC	6	1	1	4	1
HQ AFLC/AFALD	7	1	-	-	-
AF TOTALS	13	2	1	4	1
Army	4	1	1	5	1
TOTALS	17	3	2	9	2

Comments: Of those who responded, there is strong evidence that provisioning procedural differences between services do cause follow-on support or provisioning

problems. There is no apparent difference in this perception between services or among organizations.

48. How should these problems be resolved?

This question allowed those with knowledge of provisioning procedures and problems to offer suggestions for improvement.

Only a limited number of interviewees had suggestions for improvement. Six respondents, five from the Air Force, said that standardized DOD provisioning policies needed to be established and service tailoring of these procedures prohibited. Three people, two from Air Force, said Air Force should provision during advanced development rather than waiting until after production contract award.

Section VII--Training

The questions in this section were asked in order to determine the amount and adequacy of training received by acquisition personnel. Also, respondents were given the opportunity to comment on the amount and type of training, if needed, for personnel assigned to multi-service acquisition programs. Questions 49 and 51 are presented first. Questions 50, 52, and 53 are then presented together in order to display together graphically the results of these related questions.

49. What formal training have you had for your role in the acquisition process?

This question was asked to determine the types of training acquisition personnel had received. Note that on-the-job training (OJT) may be interpreted two ways. OJT can be formal training conducted by supervisors and formally documented in training records. However, this formal process is normally for enlisted personnel. OJT is also often used to mean learning by experience. It is the authors' opinion, based on follow-up questioning, that in this case a response to "OJT" usually meant learning by experience.

Table 3-33 presents the findings from question 49. Professional continuing education (PCE) is specifically developed job related education and training courses. Air Force respondents indicated specific PCE course numbers, and these are included in the presentation.

TABLE 3-33

TYPES OF TRAINING RECEIVED

	PCE						
Organization	Log 224	Log 225	Log 260	Other	OJT	College	None
Sacramento ALC	1	1	2	4	5	2	3
HQ AFLC	1	0	1	2	2	1	2
Air Force Acquisition Logistics Division	2	3	1	1	1	0	0
Army	PCE—15				7	2	1

Comments: Of twenty-six Air Force respondents, nineteen had received some formal training. These courses were primarily Air Force Institute of Technology (AFIT) courses dealing with material management, provisioning, etc. Of sixteen Army personnel interviewed, fifteen had received formal training. These included logistics management courses conducted at Ft. Lee, Virginia. Two had attended the Defense System Management Course (DSMC) at Ft. Belvoir, Virginia, and said it was an excellent course, especially for higher level supervisors. Included in the Army responses for PCE were two Air Force civilians working as liaison officers with the Army at Ft. Monmouth, New Jersey. The next question discussed, number 51, asked respondents to describe their training for multi-service acquisition programs.

51. Describe the training, if any, you have had to prepare you for the multi-service acquisition arena.

Table 3-34 displays the results to question 51.

Comments: There appears to be some indication that Army personnel interviewed felt they had received somewhat more training for multi-service acquisition programs than Air Force personnel. The only training mentioned by Air Force personnel was OJT. Army personnel who said they had training mentioned three training courses in addition to OJT. Three interviewees had attended the Defense Systems Management College at Ft. Belvoir. Two felt this

TABLE 3-34

AMOUNT OF MULTI-SERVICE TRAINING

Organization	No Training	Some Training
Sacramento ALC	13	0
HQ AFLC	5	3
AFALD	3	1
AF TOTAL	21	4
Army	11	8
TOTALS	32	12

course was excellent, while one said that although multi-service acquisitions were discussed, they weren't covered adequately. Two respondents cited the project manager's development course taught at the Army Logistics Management Center (ALMAC). One respondent, from the Defense Communications Agency (DCA), cited the Air Force's Comm-electronics Staff Officer's Course conducted at Keesler AFB, Mississippi. Although an Air Force course, it was attended by members of all services. The interviewee said that the course had a multi-service format and helped prepare him quite well for many aspects of his job in multi-service acquisition.

In an effort to see if personnel involved with specific programs had different amounts of training, questions 50 and 51 were cross-tabulated by the systems studied. Table 3-35 compares training by system studied.

TABLE 3-35

AMOUNT OF TRAINING BY SYSTEM

System	No Training	Had Multi-service Training	Training Not Adequate	Training Adequate
AN/TSC-94	11	1	1	0
AN/TSC-100	7	1	1	0
AN/MSC-40 and AN/GSC-64	3	1	1	0
AN/TTC-39	9	4	3	1
AN/MSC-78	1	1	1	0
TOTALS	31	8	7	1

Comments: Most personnel had no multi-service training. Of those who had training, all but one felt the training was not adequate. The one individual who did respond that the training was adequate did say that his training was augmented by experience in multi-service acquisitions. Although statistical proof is not possible, there is evidence that either Tri-Tac or AN/TTC-39 personnel have had somewhat more multi-service training than those working other systems studied.

50. Do your feel your training adequately prepared you to handle single service programs?

This question was intended to determine whether the formal training provided was adequate to prepare

personnel for single service acquisition programs. The responses to this question were then compared to the responses to question 52, "Do you feel your training prepared you to handle multi-service programs?" Respondents were then asked whether there should be a formal training program for multi-service acquisition personnel. Table 3-36 presents the results of interview questions 50, 52, and 53. Please note that for questions 50 and 52, a response of "NA" meant that the response to questions 49 and 51 were "no formal training had been received." A "NA" response to 53 generally meant "don't know."

The three questions are repeated here for convenience.

50. Do you feel your training adequately prepared you for single service acquisition programs?

52. Do you feel your training, by itself, prepared you to handle multi-service acquisition programs?

53. Do you feel there should be a formal training program specifically for personnel assigned to multi-service acquisition programs?

Comments: A majority (77 percent) of all respondents felt that their training for single service acquisition programs had been adequate. Eighty-six percent either had no training or felt their training had been inadequate for multi-service acquisition programs. Eighty-five percent of all respondents felt there should be a training program

TABLE 3-36

ADEQUACY OF TRAINING

(50, 52) Was your training adequate?
(53) Is more training necessary for multi-service programs?

Organization	Question #	Yes	No	No Training	Other
Sacramento ALC	(50) Single Service	8	1	3	1
	(52) Multi-Service	0	4	8	1
	(53) More Training	12	0	-	1
HQ AFLC	(50) Single Service	3	2	2	1
	(52) Multi-Service	2	5	1	0
	(53) More Training	4	3	-	1
AFALD	(50) Single Service	2	2	0	0
	(52) Multi-Service	0	3	1	0
	(53) More Training	4	0	-	0
Army	(50) Single Service	11	2	3	3
	(52) Multi-Service	4	5	9	1
	(53) More Training	15	0	-	4

for multi-service acquisition personnel, while 15 percent had no opinion. There was none who felt there should not be a formal training program.

Questions 54 and 55 were asked so that the authors could gain additional insight and ideas for multi-service training. Cross-tabulation here would not be significant. Therefore, responses are presented only in the aggregate.

54. How much training should be given? What things would you include in the training?

Of those who commented on length of training, eight felt it should be between one and three weeks. Two

said a four to six week course would be needed. Three people mentioned that a course should be shorter for those already experienced in single service acquisition.

Several specific areas of study were suggested. Twenty people felt that differences between the way services do things should be taught to those involved in multi-service programs. More specifically, ten said that differences in provisioning procedures needed to be covered in some detail. There were three comments each saying that the SISMS Manual should be taught; lessons learned from previous multi-service programs should be discussed; other guidance, regulations, and documents on multi-service acquisitions should be presented; and the acquisition cycle itself should be taught.

In addition, four comments were made that only prior single service program people should work multi-service programs. Three people felt that rather than teach service peculiarities, it would be better to standardize all regulations, procedures, etc.

55. In what format should the training be presented? Table 3-37 displays the responses to question 55.

Section VIII--Summary

Section eight allowed the interviewees a chance to summarize their thoughts and provide suggestions for improving the multi-service acquisition process.

TABLE 3-37

TRAINING FORMAT

Format	Responses		
	Army	Air Force	Total
TDY School	8	9	17
Correspondence Course	0	4	4
On-base Courses	0	3	3
TDY Teams at Bases	1	4	5
OJT	3	10	13
Defense Systems Management College	1	1	2
TOTALS	13	32	44

Question 56 was used as a "catch-all" to allow respondents to make comments beyond those not covered in the previous seven sections. Question 57's purpose was to get a general feel about multi-service acquisitions of those involved. Question 58 was to identify the most important areas of improvement, and 59 was used to help stimulate ideas for future research.

56. What would you recommend for improving logistics support for multi-service acquisition programs?

Most people had already covered suggestions for improvements in the preceding seven sections. There were some additional comments. Several said it was necessary to insure all people attend conferences, even if more TDY

money were needed. Also, there should be more standardization of procedures, and individual services should not be allowed to tailor directives for their own purposes. The need for common, compatible computer facilities was expressed, as well as the need to eliminate service parochialism in joint programs. Finally, one Army logistician expressed the desire to have the Air Force DPML type organization in the Army.

57. Do you feel that there are enough potential advantages of multi-service acquisitions to warrant their continued use?

The results to question 57 are displayed in Table 3-38. The organizational and system breakouts were used in order to see if there were any differences in attitude by organization or system.

58. What is the single most important area for improvement?

Table 3-39 displays question 58 responses.

59. What do you feel are the key areas for future research in multi-service acquisitions?

The most often mentioned area for research was into computer-related problems. Six people suggested a study to determine if Army and Air Force computer systems could be made compatible. The second most often mentioned area was in provisioning, with four respondents wishing to see some type of research dealing specifically with

TABLE 3-38

SHOULD MULTI-SERVICE ACQUISITION BE CONTINUED?

BY ORGANIZATION

Organization	Yes	No	Yes, If Done Better	Not Sure
Sacramento ALC	7	1	3	1
HQ AFLC	4	1	-	1
Air Force Acquisition Logistics Division	2	-	-	-
Army	14	-	-	1

BY SYSTEM

Organization	Yes	No	Yes, If Done Better	Not Sure
AN/TSC-94	8	-	-	1
AN/TSC-100	8	-	-	-
AN/MSC-40 and AN/GSC-64	4	-	-	-
AN/TTC-39	10	1	-	1
AN/MSC-78	2	-	1	-

TABLE 3-39

SINGLE MOST IMPORTANT AREA FOR IMPROVEMENT--
BY ORGANIZATION

Response	Sacramento ALC	HQ AFLC and AFALD	Army	Total
Provisioning	4	1	4	9
Standardize directives	2	4	2	8
Earlier involvement by using service	1	2	1	4
Better coordination	-	-	3	3
Standardize MX concepts	1	1	1	3
PICA service fund and budget for all life cycle costs	2	-	2	4
Registration problems	1	1	1	3
Improve attitude/education about multi-service programs, especially at higher levels	1	1	2	4
Other	2	1	1	4

provisioning. Two interviewees mentioned the need for a cost study to determine if multi-service acquisitions are really less costly than having each service acquire its own systems. Finally, there was one request each for a feasibility study on the "super-SPO" concept and a study to see if systems acquired through multi-service efforts are really interoperable once fielded.

Summary

This chapter has presented the results of the forty-four telephone interviews. Extensive use was made of cross-tabulated responses, where appropriate. No attempt to interpret the responses was made here. In Chapter IV, the data will be interpreted, and the first six research questions answered.

CHAPTER IV

INTERPRETATION OF RESULTS

Introduction

Chapter III presented the results of the forty-four interviews with multi-service acquisition personnel. No attempt was made in Chapter III to analyze or interpret the findings. Rather, the data were presented in a format which would enable the reader to formulate his or her own opinions of the results, as well as provide an easy reference to data supporting the interpretations presented here in Chapter IV and the recommendations to follow in Chapter V.

This chapter presents the authors' interpretation of those results presented in Chapter III. The chapter is presented in two sections. The first section presents an interpretation of the results of each of the eight major sections of the interview. Then, the second section answers research questions 1 through 6. Research question 7 will be answered in Chapter V, Conclusions and Recommenations.

Interpretation of the Results

Demographics

Surprisingly perhaps, the overall multi-service acquisition experience level was quite high. The authors had expected it to be much lower. Table 3-1 did show that,

on the average, personnel had about half the experience in multi-service acquisitions as single service.

The Army's experience level appears to be much higher than the Air Force's. In all three areas of experience--acquisition, comm-electronics, and multi-service, the Army had about twice the experience level of the Air Force (see Tables 3-2 and 3-3).

As expected, civilian personnel were much more experienced than the military, and there is some evidence that Army military were generally more experienced than Air Force military. No clear explanation for these differences in experience levels is readily apparent.

There does not appear to be any significant difference in levels of experience by system studied (see Table 3-4). There could be more experience on the AN/MSC-40 and AN/GSC-64 programs, but due to non-random sampling and the small sample size, no conclusion can be made.

One significant finding regarding experience was noted. At Sacramento Air Logistics Center (ALC) two persons who had recently been assigned key supervisory roles, had no prior experience in multi-service acquisitions. However, it is noteworthy that both were very much aware of multi-service acquisition problems and seemed quite anxious to begin their new roles. In addition to good levels of experience in terms of years, most personnel also appeared

to have very wide backgrounds working on different types of systems.

In terms of manning, most organizations felt they were somewhat undermanned in terms of total personnel assigned (see Table 3-6).

The civilian military mix of personnel appears to be satisfactory, as does grade structure of personnel assigned. Training appears to be the major area of weakness, and this training deficiency is perceived to be most serious at the Sacramento ALC. Experience is also an apparent problem at the Sacramento ALC and Air Force Acquisition Logistics Division, but less of a problem with the Army. It is the authors' opinion, however, that the apparent satisfaction with training by the Army stems more from higher experience levels than actual training. This issue will be explored further in the interpretation of the questionnaire's training section.

Guidance

The wide range of documents cited as being used as formal guidance (see Tables 3-7 and 3-8) indicate that there is probably a need for some type of improvement in this area. Of course, part of the reason for such a wide range of documents is that different functional areas use different documents for guidance. However, there still appears to be deficiencies in this area.

Several people felt Standard Integrated Support Management System (SISMS) would be adequate if used, yet many people felt it was too vague and general to be of much use.

Another apparent problem which needs to be addressed is the practice of tailoring DOD regulations to individual service needs. This was the second most cited problem and was perceived as a problem by both services. Further research would be needed to determine how severe the impact of tailoring of DOD regulations would be, but it would certainly appear that tailoring should not be allowed.

The responses to question 12 indicate a clear need for improvements in the provisioning procedures for multi-service programs. There are philosophical and procedural differences between the ways Army and Air Force handle the provisioning conference, and these differences need to be reconciled. Specific recommendations regarding provisioning will be made in Chapter V. Incidentally, the differences in provisioning appear to affect Air Force more than the Army. This is probably because Army, as the lead service, chairs the provisioning conference and uses its own procedures.

Related to provisioning problems are problems in agreeing on maintenance concepts, repair levels, and source, maintenance, and recoverability (SMR) coding. No clear methods of resolving these difficulties were

presented, and this is clearly another area in which improvement or further research is warranted. Other problem areas which were most often cited were in communications, funding, and standardization procedures. These will be discussed in later sections of this chapter.

Also, the major problems cited do not appear to be being resolved. Most people responding to question 13 felt that problems had either not been resolved or had only been worked around. Also, multi-service programs are perceived as causing more and different problems than single service (see Table 3-9). Therefore, specific multi-service procedures and philosophies must be developed.

Coordination

The data indicates a need for more coordination early in multi-service acquisition programs. Agreements, when reached, often occur later in the acquisition cycle than would be desirable (see Table 3-10).

There also appears to be significant differences in early coordination between the different systems studied. The AN/TSC-94 and AN/TSC-100 programs apparently had fewer early agreements than did the other programs studied. The importance of these agreements will be discussed in more detail in the second section of this chapter when the research questions are answered.

The responses to question 18 indicate that, although there may be ways for Air Force to evaluate Army

programs for possible Air Force use, these procedures are not clear enough or well enough understood to be of significant use. This is another area which will be addressed as "recommendations" in Chapter V. However, there does appear to be good early review of new systems managed by Defense Communications Agency (DCA). Even in this case, there is evidence that logistic considerations are not made early enough.

One of the areas that seems to be handled quite well is equipment modification after a system becomes operational. The use of configuration control boards and clear procedures for modifying equipment make this area one where improvement is probably not needed.

General Information

A major area where improvement is needed is in management information systems. There was much dissatisfaction with the ability of the services' automated information systems to communicate with each other (see Table 3-15). The problems of computer interface showed up in this section as well as the provisioning and funding sections. Further research and improvement of interservice computer systems is certainly warranted.

Air Force personnel also expressed dissatisfaction with communications between people involved on multi-service acquisition programs (see Table 3-16). Even more

significant was the fact that personnel who worked the AN/TSC-94 and 100 programs felt communications between services was poor, while those working other systems (AN/MSC-40, AN/GSC-64, AN/TTC-39) felt communications were good between services (see Table 3-17). This trend will be discussed further in the second section when the research questions are answered.

Also apparent from the responses to question 26 is the need for higher management to insure that agreements or decisions reached between services are transmitted down to lower organizations within the services.

Because the data (see Table 3-18) indicate a very high importance of meetings between people on multi-service programs, proper TDY funding is critical. In fact, the scarcity of TDY funds was cited as a barrier to effective program coordination several times.

The responses to question 28 (see Table 3-19) again point out the need for early coordination. Points of contact must be established early.

Several relatively simple ways to improve coordination were suggested (see Table 3-21). These include the need to get people to early meetings, the need for an Army liaison office at Sacramento, standardized operating procedures, periodic exchange of organizational charts, and the importance of putting point of contact on all messages or letters between organizations.

The responses to question 31 split support for making the program manager or logistics personnel responsible for briefing logistics at program reviews (see Table 3-23). Having the program manager responsible would perhaps force him to consider logistics more fully, while having logistics personnel brief brings an additional functional expertise. It is the authors' opinion that it matters not who briefs as long as logistics are adequately considered by the program manager.

There appears to be inadequate feedback on multi-service programs within Air Force organizations (see Table 3-24). This should certainly be considered as a possible area for improvement. The Army appears to have more feedback provided to its personnel.

It was gratifying to note that a majority of Air Force personnel measured success by supportability parameters rather than cost and schedule milestones (see Table 3-25). However, Army personnel tended more toward cost and milestones as success measures. This is as expected, however, as the people involved in acquisition of the systems were Army, whereas Air Force personnel were almost all from Air Force Logistics Command. The important point to be made, however, is that all personnel involved in acquisition of new systems should maintain a concern for supportability as a measure of success.

Funding

One of the apparent problems in funding is that there appears to be a lack of standard procedures for transferring funds. Three basic approaches are used. Items and/or initial spares may be prefunded. The advantage of prefunding is that the lead service has working capital, which would be especially important during the acquisition cycle. However, there have been cases where this prefunding has resulted in the using service paying twice for initial spares. The second method used for transfer of funds is the military interdepartmental purchase request (MIPR). The MIPR results in a transfer of funds prior to an item being placed on order. Problems do occur with the MIPR. Apparently, if Air Force includes several items on a MIPR sent to the Army, Army must manually convert the items to a format which can be tracked during purchase. This is apparently a computer problem. In fact, Mr. Robinson, the Air Force liaison officer at SATCOMA, stated that Army computer specialists were working on this difficulty (9). In the meantime, Air Force personnel need to work closely with the Army to help alleviate problems. Air Force should especially be certain to prescreen items placed on a MIPR to insure they are not requesting equipment already available or government-furnished equipment.

The third type of funds transfer is the funded requisition. Items are ordered and then paid for when shipped. There were no problems cited with this procedure. The only possible shortcoming here is that the executive service must pay inventory carrying costs. Also, working capital is not available under this method.

The other major area of concern in funding is who owns or should maintain inventory. Obviously, inventory savings would be possible if the lead service maintained depot level spares. However, the current system has no way to insure that using service assets are protected. As a result, Sacramento ALC now maintains a special segregated inventory of its own spares. This is an area that needs to be improved if savings from duplication of inventory are to be realized.

Finally, there appears to be a great deal of support for a procedure by which the executive service funds for all spares requirements (see Table 3-31). This approach would require that the executive service be adequately funded to handle acquisition, inventory, and distribution costs. However, this approach would certainly simplify funds transfers and alleviate double payment and other problems.

Provisioning

The major differences between Air Force and Army provisioning procedures lie basically in the rate of actions and items covered during the provisioning conference. Air Force apparently tries to accomplish more at the provisioning conference than does the Army. Air Force also is more concerned with cataloging than is Army. This appears to be due to philosophical and procedural differences regarding stock numbering. Air Force relies much more heavily on national stock numbers (NSN) that Army or Navy to locate spares.

Other significant areas were also discovered. Air Force has not yet fully incorporated Logistics Support Analysis (LSA). This is probably due to the fact that Air Force will not begin provisioning until after production contract award, while the Army will begin provisioning earlier.

An overwhelming majority of personnel interviewed felt that provisioning procedural differences caused support problems on multi-service programs (see Table 3-32). These differences must be resolved, and specific recommendations are included in Chapter V.

Training

Training for multi-service acquisition positions is a major problem area. The problem appears to be more

serious for the Air Force than Army (see Tables 3-6 and 3-34). One of the primary reasons for this perceived higher level of Army training appears to be the Defense Systems Management College (DSMC) at Fort Belvoir. Also, the Army's project manager's development course at the Army Logistics Management Center (ALMAC) is apparently satisfying Army's need for multi-service acquisition training. Nonetheless, across-the-board training for multi-service acquisition personnel should be increased. Again, specific recommendations will be presented in Chapter V.

Interview Summary

People involved in multi-service acquisitions feel very strongly that the advantages of multi-service programs outweigh the disadvantages (see Table 3-38). The primary areas for improvement appear to be in provisioning, standardization of directives, and funding (see Table 3-38). Desired areas for future research include studies aimed at making the individual services' computer systems more compatible. Research is also needed into provisioning procedural improvements.

The preceding section of Chapter IV has summarized and interpreted the results of the research study by functional areas. The following section briefly answers the first six research questions. Chapter V will then present specific recommenations based on the analysis in

Chapters III and IV. Note that the numbers in parentheses after the research question are the interview question numbers related to that research question. They are presented for ease of cross-reference to Chapter III results.

Research Questions Answered

Research Question 1

What is the current system for Army to acquire communications systems for multi-service use? (17, 18, 22, 23, 27, 28, 35, 36, 41, 45, 46)

Currently, the system used for multi-service acquisition programs consists of general guidelines with many workaround procedures. These workarounds result from differences between services in funding, provisioning, and other areas researched and presented in Section III. The data indicate the need for more standardization of procedures, especially in provisioning, and increased training for multi-service acquisition personnel.

Strategic satellite communications terminals fall under the responsibility of the Defense Communications Agency (DCA). This agency is responsible for overall administration of multi-service programs in the strategic terminals arena.

Tactical satellite terminal programs, however, are less centrally controlled. In this case, the Army, as the lead service, is responsible for program management.

Coordination between services appears to be more difficult, because there is no central controlling agency. There is an Air Force liaison at the U.S. Army Satellite Communication Agency (SATCOMA) responsible for interservice coordination.

The third class of programs studied are under the overall supervision of Tri-Tac, a multi-service agency located at Ft. Monmouth, New Jersey. Tri-Tac appears to have less control over its programs than DCA; however, there is more centralized decision making than in the tactical satellite terminals programs.

Research Question 2

Are there deficiencies in the guidance provided by current directives for multiservice acquisition programs? If so, can they be identified? (Section II and Section VII)

The data presented in Chapter III indicate three deficiencies in guidance. First, the guidance in the SISMS is too general to be of complete use for multi-service acquisition personnel. Second, the detailed guidance is not readily or easily accessible. Many interviewees commented on how much digging and searching they had to do to find applicable directions. In fact, one organization at Sacramento Air Logistics Center replaced all the DOD, Air Force, and Army directives with local operating instructions.

Finally, services appear to be taoloring DOD regulations, thus adding to the problem of lack of standard multi-service guidance.

Research Question 3

Were the problems in the AN/TSC-99 unique to that program, or were those problems typical of multi-service acquisition programs? (11, 12, 15, 16, 26, 30, 39, 40, 44, 47)

There was no indication that any of the programs studied did not suffer from the same types of problems described in Chapter I on the AN/TSC-94. There were no organizations or persons interviewed, or systems studied which did not report problems. However, there seems to have been more difficulties on the AN/TSC-94 and 100 programs. The authors believe this may be at least partly due to the eloquence and experience of the acquisition manager at Sacramento on these programs. He had done much detailed research into problems on the 94 and 100 and was able to point out perhaps more problems than personnel involved on the other programs. However, there were some differences in the 94 and 100 programs which will be explained more fully when research questions 5 and 6 are answered.

Research Question 4

What are the major problems encountered in the acquisition of ground communications equipment when the Army is the lead service and the Air Force the user? Are these problems different from, or more severe than those encountered in single service programs? (9, 11, 12, 19, 20, 22, 23, 25, 26, 30, 35, 39, 40, 44, 47, 50, 52, 56, 58)

The major problem area was provisioning, followed by training, funding, and lack of standardized procedures and guidance, and communications and coordination between services. (See Tables 3-6, 3-7, 3-17, and 3-38). Multi-service acquisition programs are perceived to cause more problems than single service programs (see Table 3-9).

Research Question 5

Can acquisition programs be identified which seem to be more effective than the AN/TSC-94 program? (9, 11, 12, 19, 20, 22, 23, 25, 26, 30, 35, 39, 40, 44, 47, 50, 52, 56, 58)

No hard data was found which could be used to compare relative effectiveness of the six programs studied. The general impressions given by interviewees who had worked on the AN/TSC-94 and 100 programs and other programs was that the 94 and 100 had been the most difficult programs of those studied in the research. Perhaps the

best comparison would be the AN/MSC-40 and AN/GSC-64 programs as opposed to the AN/TSC-94 and 100 programs. In these cases, the acquisition managers at Sacramento for these programs, both working in the same office, agreed that the 40 and 64 programs had seemed to progress more effectively than did the 94 and 100 (1; 2). Therefore, the authors concluded that, for the sake of research question 6, that the 40 and 64 had run more smoothly.

Research Question 6

What differences were there, if any, in programs more successful than the AN/TSC-94? (13, 17, 18, 22, 23, 24, 26, 27, 28, 32, 33, 35, 36, 38, 40, 41, 43, 45, 49, 51)

Several key differences were discovered which could explain why the AN/TSC-94 program could have been less successful. First of all, and although not covered specifically by interview questions, the authors discovered that the AN/TSC-94 is not really a multi-service program. That is, the 94 was acquired by the Army for Air Force use. This raises the obvious question of appropriate lead service management attention to a system being acquired solely for another service.

The AN/MSC-40 and AN/GSC-64 are truly multi-service systems. Both Army and Air Force will be using the systems.

A second key difference between these programs could be the experience level of personnel assigned. Table 3-4 shows that the 40 and 64 programs' personnel experience levels are higher than for the 94. However, as pointed out in Chapter III, due to non-random sampling and small sample sizes, this conclusion cannot be reached based on statistical procedures.

More significant than experience levels was the fact that early agreements and joint operating procedures were used on the 40 and 64 programs while not used on the 94 (see Table 3-11). Also, personnel working the 40 and 64 programs were much more satisfied with the amount of cross-service communications than those working the 94 (see Table 3-17).

When these trends became apparent, follow-up questioning was done in order to determine why coordination and communications seemed to be better on the 40 and 64. The apparent cause was the fact that the 40 and 64 programs, because they will support command and control communications of tactical nuclear forces, are considered highly visible and important programs. As a result, they received much more management attention. Even TDY funding, so often mentioned as a problem in many programs, appeared not to be a problem here. Both the acquisition manager at Sacramento and the Army program manager commented on how accessible TDY funds were for the 40 and 64 programs (1; 8).

Chapter Summary

Chapter IV has summarized and briefly interpreted the findings of the research study. It has also provided brief answers to the six research questions proposed in Chapter I. Chapter V will present specific recommendations for improving multi-service acquisitions.

CHAPTER V

RECOMMENDATIONS AND CONCLUSIONS

Introduction

Chapters III and IV pointed out several areas in multi-service acquisitions in which improvements are needed. These major areas included guidance, coordination, funding, provisioning, and training. This chapter presents specific recommendations in each of the seven areas covered by the research questions and summarized in Chapter IV. In addition to providing specific recommendations in each of the seven areas, this chapter also outlines some key areas for further research.

Demographics

Civilian experience levels in both the Army and Air Force appear to be quite adequate. There did appear to be some key positions at the Sacramento Air Logistics Center staffed by personnel with low experience level people. However, even in these cases, personnel had considerable prior experience in both single service acquisition and communications-electronics programs.

Military experience levels in both services were much lower, especially in the Air Force. This will be a continuing problem as long as the military services

continue their present policy of rotating officers through assignments every two to four years. This problem is exacerbated by the policy of using acquisition assignments for career broadening of officers.

Recommendation: Tour lengths for military officers, especially program managers and logistics managers, should be lengthened to at least five years. Also, services should establish career progression acquisition programs, as well as assigning special experience identifiers to officers' specialty codes, identifying officers with acquisition and multi-service experience. With these procedures military personnel managers will be better able to assign properly experienced officers to key positions.

Guidance

The Standard Integrated Support Management System (SISMS) manual is the key document for multi-service acquisition programs. As documented in Chapters III and IV, opinion is split as to the adequacy of this document. Some felt that the SISMS was too general and vague; others felt it would be adequate if only it were fully implemented. Additionally, the wide range of documents used as formal guidance cited in response to interview question 10, indicates that a single, integrated, complete document would be impossible.

Recommendation: The SISMS manual should be retained in its present form as a document for basic policy and guidance. The detailed procedures for multi-service acquisitions should be incorporated, after joint service coordination into existing service regulations. The reason for this approach is straightforward. Many organizational levels and people are involved in different functions of multi-service programs. They become familiar with their own service regulations regarding their functional areas. Since most people will work both single and multi-service programs, the authors believe the multi-service procedures should be included in the service regulations people will be most familiar with. Implementing this concept will require two things. First of all, a permanent joint service working group must be established to agree on and coordinate specific multi-service procedures. This permanent group must be made up of those middle level managers (0-3 through 0-6 and GS-11 through GS-15) who handle these multi-service programs. The group must be given sufficient authority and backing, preferably from the Joint Logistics Commanders, to establish and implement joint policies and procedures. Secondly, once specific multi-service procedures are included in the service regulations, the individual services must be prohibited from tailoring or supplementing the multi-service procedures without

prior approval and coordination by the permanent working group.

These recommendations should improve the basic procedural guidelines and prevent the costly, difficult, manual workarounds currently employed. The next section outlines additional recommendations for improving coordination between services on specific programs.

Coordination

Early coordination is a definite problem. There is much confusion as to how, if, or when early review is accomplished. As the AN/TSC-94 case indicates, the Air Force is not getting involved early enough in the acquisition cycle. The Army version of the AN/TSC-85 upon which the Air Force AN/TSC-54 is based was entering the production phase before Air Force became involved. At this point it was too late for the Air Force to influence the basic design with Air Force maintenance and operation concepts. The best the Air Force could achieve was a modification of the Army version. This kind of situation has an adverse affect on Design to Cost/Life Cycle Cost (DTC/LCC) efforts.

Recommendation: To improve early coordination, the function of the Air Force Liaison Office located at SATCOMA should be expanded. Presently this office acts as a liaison between Air Force Logistics Command both at Hanscom Field and Sacramento, and the Army program offices.

The ESD/XR office at Hanscom AFB is involved in conceptual phase review of programs. If this was expanded to include early review of Army initiated programs, the Air Force would be better able to program funds and influence design with Air Force considerations.

A second area for improvement is in the use of Joint Operating Agreements (JOA). As shown in Chapters III and IV, programs (the AN/MSC-40 and AN/GSC-64) which had JOAs established early in the program appeared to run more smoothly than those that did not (AN/TSC-94 and AN/TSC-100).

Recommendation: All multi-service acquisition programs should be required to have JOAs established at the earliest possible point of the acquisition cycle, preferably in the conceptual phase, but certainly not later than full-scale engineering development. JOAs should include jointly reconciled maintenance and operations concepts, provisioning procedures, program milestones, integrated logistics support plans, etc. Also, as contracts are written, Data Item Descriptions (DIDs) should include information required by both services. Also, the JOAs should include agreements on Logistics Support Analyses (LSA) to be provided by the contractor. These areas cited are merely representative of areas where JOAs must be obtained. The point is, JOAs are needed wherever both services will be impacted, and they must be obtained early in the acquisition cycle.

Although not prepared to make specific recommendations regarding the establishment of a single super-SPO or joint program type office, the authors would like to point out the apparent efficiency of programs managed by the Defense Communications Agency (DCA). These programs are those involving strategic satellite communications terminals. DCA acts as an overseer of these programs, and there was some evidence in this study indicating the viability of this approach.

Recommendation: Further research into the feasibility of DCA expanding to include oversight of tactical satellite communications programs should be conducted.

The research also pointed out the need for some simple recommendations to improve coordination between services in multi-service programs. These are summarized below.

All message and letter communications should include point of contact for return communications. Although this seems so obvious as to be not worthy of noting. Several personnel interviewed did say they were not able to respond to some communications because of missing return addresses or contact points.

All organizations involved in multi-service acquisition programs should periodically exchange updated organizational charts. Frequent personnel changes, especially for military, often cause breakdowns in communication.

In addition to exchanging organizational charts, organizations should also periodically exchange rosters which display a person's name, program he or she is working on, and responsibilities on that program. As the data indicated, people are relying very heavily on telephone calls to resolve problems. This type of roster exchange would greatly facilitate cross-service communications.

Consideration should also be given to establishing an Army liaison office at Sacramento similar to the Air Force liaison at SATCOMA. Regardless of how much effort is made to standardize procedures, train, exchange rosters, etc., it is not reasonable to expect all people at all organizational levels and in all functional areas to become experts in how the "other service" operates. The liaison officer position would be very helpful and was cited by several people interviewed as necessary for improving multi-service programs.

Because the importance of reaching agreements and understanding are so much more important, and difficult to achieve, on multi-service programs, TDY funds must be adequate for getting people to joint conferences. Personnel responsible for allocating TDY funds for conferences must be aware of the increased importance of these meetings for multi-service over single service programs. Budget considerations should be made accordingly.

Finally, all personnel involved in multi-service programs must be impressed with the importance of clear communications, especially when dealing with members of other services. Acronyms and terminology differences between services can create severe problems in understanding. Even after eight months of research and sixty hours of interviews, the authors were still confronted with new terminology, even as the research closed. This problem was also cited by many interviewees. In fact, one high-level supervisor cited an instance of a joint service meeting where this problem was very apparent. Throughout the meeting, individual service members used their own terminology and acronyms. The other service personnel would nod in apparent understanding. As the meeting concluded, this supervisor observed that much of the content of the meeting had been lost because of unfamiliar or undefined terminology and acronyms. It is almost with tongue in cheek that the authors recommend that multi-service personnel not be allowed to use abbreviations and acronyms. The point is, however, that personnel working with other services must be aware that the languages are different, and every effort should be made to communicate clearly when working with the "other service."

The recommendations presented here were intended to improve coordination between services. The next section

explores Section IV of the questionnaire, general information.

General Information

The major finding of Section IV of the interview form was the inability of service automated management information systems to interface with each other. Because of this interface problem, much data, especially key provisioning data, must be manually transferred. This manual transfer slows the provisioning process and introduces opportunities for errors.

Recommendation: Either Air Force or Army software experts, or private consultants should conduct a study on the feasibility of creating cross-service computer interfaces. These interfaces would greatly facilitate information flow between the services.

Other recommendations for communication and coordination improvements were presented in the previous section of this chapter. The final recommendation in this section concerns data collection on multi-service acquisition programs.

As the data presented in Chapter III indicated, there is not a comprehensive, integrated history of an acquisition program. Rather, individual personnel working a program may or may not maintain personal files of problems encountered and actions taken on their aspects of a

program. Because of personnel turnover and informal record keeping, corporate memory on a program appears to often be lost or at least degraded. As a result, the potential for repeating past mistakes exists.

Recommenation: Increased use should be made of lessons learned data files such as those maintained by the Air Force Acquisition Logistics Division (AFALD).

Also, further research should be conducted into the feasibility of a computerized diary for each program. This automated type system could be maintained at the program office with access terminals located at the major organizations involved in multi-service programs. The system should use an interactive terminal whereby personnel could call up information previously entered on functional areas within a particular program. Key program personnel, their responsibilities, phone numbers, and other important information could also be maintained in a permanent file. This would further facilitate communications between services. A computer program similar to the one used by the authors to record, store, and sort data for this study would be appropriate. This program is included at Appendix B.

Funding

The existing funding structure for the tactical satellite programs (AN/TSC-94, AN-TSC-100, AN/MSC-40, and

AN/GSC-64) has caused some problems and needs to be improved. Because of the limited data on Tri-Tac programs (AN/TTC-39) and DCA programs (AN/FSC-78), the discussion here is limited to the tactical satellite terminal programs.

As described in Chapter IV, end systems and initial spares are prefunded by each service. This prefunding causes problems. First of all, whether because of accounting procedures, computer interfaces, etc., the Air Force has in the past paid twice for its initial spares. Also, if a using service does not adequately budget for spares, as in the F-5/T-38 case cited in Chapter IV, a dilemma results. The executive service is either forced to provide the additional funds for initial spares, or all services will be "under-spared." Other problems can result under the pre-funding concept. If a service decides to cancel out of a multi-service program, the other services, and especially the executive service, have two possible problems. First, they may be forced to provide additional funds to keep the program alive. Or, they may be stuck with higher levels of initial spares than would be economical.

Prefunding is used for three reasons. First, it is used to provide working capital to the executive service. Second, it prevents the executive service from paying for unique requirements of the other services. Finally, it acts as a deterrence to program cancellation by other

services. However, it is the authors' opinion that prefunding problems outweigh these functions.

Recommendation: Prefunding for end systems and initial spares should be eliminated. The executive service should be funded adequately by DOD to acquire all end systems and initial spares for multi-service programs. Once end systems and initial spares have been acquired by the executive service, follow-on logistics support should be handled by the executive service and paid for by funded requisitions from the using services. This procedure would eliminate the problems caused by prefunding. It would require that all services share equally in shortages of spare parts when they occur. The data presented in Chapters III and IV strongly support this proposal. This proposal would require DOD and congressional recognition of multi-service programs, because the executive service would need more money for a given program under this concept. However, this concept should be supportable because of continued congressional and GAO emphasis on eliminating duplication of effort among the services.

Provisioning

Provisioning was cited most often as the area for improvement in multi-service programs. The difficulties in provisioning appear to result from different procedures between Air Force and Army. These differences were

presented in Chapter III and summarized in Chapter IV. Basically, the Army begins provisioning before production contract award, whereas the Air Force waits until the production contract. The Army spends less time at the provisioning conference; however, Air Force accomplishes more actions at the provisioning conference. These additional actions include cataloging and prescreening of national stock numbers (NSN).

The overall Army provisioning cycle is much longer than the Air Force. This is apparently due to philosophical differences regarding contractor support. The Army is much more willing to use interim contractor support (ICS) than the Air Force. In fact, one Air Force logistician said he measured success in his job by being able to avoid using interim contractor support.

Recommendations: Air Force should change its policy regarding when provisioning can begin and on ICS. Specifically, Air Force should provision during full-scale development, as does the Army. Once Air Force becomes accustomed to using Logistics Support Analysis (LSA), as has recently been implemented, this early provisioning will become more feasible. Also, for unstable items whose demand cannot be confidently predicted, ICS should be used, in accordance with Army philosophy.

Because of the Air Force reliance on national stock numbers, Army should accomplish the same actions as

Air Force at the provisioning conference. Specifically, Army must prescreen DLSC for stock numbered parts, and cataloging should also be done at the provisioning conference. These recommendations incorporate the best of both services' provisioning procedures, rather than the worst, as is apparently being done now on multi-service programs.

One area for further research in this area would be a cost analysis of ICS versus organic logistics support during the first year after a system becomes operational.

Training

As presented in Chapter III and summarized in Chapter IV, there is a definite need for training in multi-service acquisitions. This need is somewhat more pronounced for Air Force than Army. However, personnel assigned to multi-service acquisition programs need training to better prepare for their multi-service roles. This training currently is not adequate.

Recommendation: Current professional continuing education (PCE) courses should be expanded to include blocks on multi-service acquisition procedures. Included should be training on the different basic philosophies and procedures of the other services. Items to be covered would include the differences in present provisioning procedures, different levels of repair between Army and Air Force, etc. Also, of primary concern is the differences

in terminology and organizational structure between services. As cited earlier in this chapter, terminology differences have created problems in coordination between services. Training in terminology would improve inter-service communication and coordination.

The authors believe at this time that it would not be economically feasible to set up a specific course or courses just for multi-service personnel. Therefore, training must be incorporated into existing PCE curricula. Specific course content and syllabi are areas for further study. Personnel from the Air Force Institute of Technology's School of Systems and Logistics, the Army Logistics Management Center, and the Defense Systems Management College should meet to establish specific training needs.

Summary

The purpose of this research study was broad in nature, that is, to identify the major problem areas in multi-service acquisition programs. Specifically, this study was limited to programs in which the Army was the executive service, and the Air Force a using service. The study was further limited to less-than-major communications-electronics systems, primarily tactical satellite communications terminals. Because of the diversity found in procedures just within this study, the reader must exercise

caution when trying to generalize from the conclusions reached here.

The recommendations presented have of necessity been somewhat broad in scope. This is in keeping with the purpose of the study, to identify the major problem areas in multi-service programs. Several major problem areas were discovered. These were coordination and communication problems between services, the inability of service automated management information systems to communicate with each other, funding problems, provisioning problems, and a shortage of training. Recommendations for improvements have been presented in Chapter V for each of these areas. Further research and more specific improvements are needed in each specific area. Following are some specific questions for further research.

1. Can a standard DOD provisioning system be developed?

2. What specific things should be included in course syllabi for multi-service acquisition training?

3. How can effectiveness of provisioning decisions be measured after a system becomes operational?

4. Finally, consideration should be given to contracting private industry for a feasibility study into ways of interfacing the individual services' computer systems, to include supply, financial, and provisioning data

systems. If this could be accomplished, multi-service programs could be handled much more efficiently.

With the current emphasis on reducing acquisition costs, multi-service programs have great potential. Personnel working the multi-service programs covered by this study were highly supportive of the multi-service process, in spite of the many problems. By implementing the recommendations made herein, and by accomplishing the recommended further research, the multi-service acquisition of tactical satellite communications can be made even more efficient.

APPENDICES

APPENDIX A

INTERVIEW QUESTIONNAIRE

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OH 45433

REPLY TO ATTN OF: LSOG (Capt Cox, 56569)

SUBJECT: Multiservice Acquisition Programs

TO:

1. As graduate students at the Air Force Institute of Technology (AFIT), we are conducting a study of difficulties encountered in multi-service acquisition programs. We are concentrating on communications and electronics equipment acquired by the Army and used for the Air Force. Our objective is to consolidate the knowledge and experience of those who have worked in this challenging area into a single document which might help those who have to work this area in the future.

2. We will be calling for your inputs sometime between 25 February and 30 March. We have attached a copy of the telephone interview we will be using so that you may be prepared to provide us any information that could help our study. Also, it should help us to conduct the interview as quickly as possible. We realize you are all very busy, but hope that you can spare the 30-45 minutes we feel we need to accomplish the interview.

3. The survey will be conducted with people at many different organizational levels and in different functional areas. Therefore, some questions may not apply directly to you. However, if you know the office or person who could help, we would appreciate that information as well.

4. Our research to date has shown that there may be great potential for multi-service acquisition programs. However, there appear to be some difficulties in implementing these programs. With your help, we hope to be able to provide some information which will improve the multi-service acquisition process. We sincerely appreciate your time and help.

Leland D. Cox

LELAND D. COX, Capt, USAF

David B Wile

DAVID B. WILE, Capt, USAF

I. Demographic Data

1. What is your rank?

2. What is your AFSC?

3. How many years of experience do you have in acquisition?

4. How many years of experience do you have in CEM programs?

5. How many years of experience do you have in working multiservice acquisition programs?

6. What specific programs/systems have you been involved with? Are you currently working any of these programs? Which one(s) are multiservice programs?

7. What are your responsibilities in this/these programs?

8. What is your formal position?

9. Is/Was your organization adequately manned?

   Grade-wise?
   Experience-wise?
   Training-wise?
   Civilian versus military?
   AFSC background?

II. Guidance

10. What directives do you use as formal guidance in your work on multiservice programs?

11. What specific deficiencies, if any, exist in the formal guidance?

12. What specific difficulties did you or your organization encounter in your program?

13. How did you resolve these problems?

14. Describe problems you have experienced that you feel were caused by the multiservice aspect of your program.

15. Describe problems you have experienced that were typical of both single service and multiservice programs.

16. In your opinion, do multiservice programs cause more, or different, problems than single service programs?

III. Coordination

17. What kinds of agreements were reached between services before system acquisition decisions were begun?

18. Is there a procedure for AF to evaluate future Army programs for possible AF use, before the Army has already begun its acquisition process? When does AF first have a chance to get in on equipment or logistics decisions?

19. Do you feel that the executive service/using service relationship is correct? Should a DOD level "super-SPO" be established for all multiservice acquisitions? If so, what responsibilities should the individual services maintain?

20. For multiservice programs, should the executive service be given all financial resources to accomplish both initial and follow-on support?

21. Should the AF "buy into" the Army logistics system or maintain its own initial spare parts inventory?

22. After IOC, how are service modifications handled to insure continued standardization of parts and maintenance procedures?

23. How are AF maintenance concepts (field versus intermediate versus depot) taken into consideration on single service programs? . . . in multiservice programs? What problems arise because of different maintenance concepts between Army and AF? How are conflicts resolved? Are maintenance concept differences included in the general operating requirement (GOR) or statement of operational need (SON)?

IV. General Information

24. What types of information do you require to perform your role in multiservice acquisition programs?

25. Is the existing management information system adequate to provide this information across services?

26. Was there sufficient communication with the other services?

27. Describe the way you coordinated with the other services in your multiservice programs.

28. Did you know who to contact in other services for coordination? How did you find the "right person" to coordinate with?

29. How could coordination between services be improved?

30. Are the LAR/LOGCAP formats adequate? If not, what is lacking?

31. Should the program manager or someone else be responsible for briefing logistics items at LAR/LOGCAP reviews?

32. What feedback do you receive on your program?

    Short term (first year after IOC)
    Long term (1-4 years after IOC)

33. How do you measure success in your job? (IOC, milestones, ISSL fill rates, NMCS rates, other?)

34. Is there a "life history" of an acquisition? Where would this information be located? If not, should there be? What should be included?

V. Funding

35. How is the funds transfer problem handled?

    For end systems?
    For initial spares?
    For follow-on spares?

36. How are Army and AF requirements integrated into one requisition objective? Does different funding level/concept result in one service paying more than its fair share?

37. How should the Air Force fund preoperational spares and initial provisioning when follow-on support is to be provided by the executive service?

38. How does the Air Force handle pre-funding of Army items when it is the executive service?

39. What approach should be taken on the one item per MIPR problem?

40. Is specific item integrity of prefunded spares maintained? Should it be? Or should the executive service be given the requirement to buy for initial provisioning and payment sent when the item is received?

41. Who physically holds the assets? Who should?

42. What changes would you recommend in the funding structure?

VI. Provisioning

43. How much input do you have in the provisioning process?

44. What problems exist in the cataloging system on multiservice programs?

45. How does the Army forecast initial requirements to push assets out to the field?

46. What differences are there between AF and Army provisioning procedures?

47. Do these differences cause provisioning and follow-on support problems for multi-service programs?

48. How would these problems be resolved?

VII. Training

49. What formal training have you had for your role in the acquisition process? (Tech School, PCE, Grad prog., etc.)?

50. Do you feel your training adequately prepared you to handle single service acquisition programs?

51. Describe the training, if any, you have had to prepare you for the multiservice acquisition arena.

52. Do you feel your training, by itself, prepared you to handle multi-service program problems?

53. Do you feel there should be a formal training program specifically for personnel assigned to multiservice acquisition programs?

54. How much training should be given? What things would you include in the training?

55. In what format should the training be presented?

TDY school
Correspondence
OJT
Other

VIII. Summary

56. What would you recommend for improving logistics support for multi-service acquisition programs? Use the following as possible areas for improvement.

Training	Maintenance concepts
Funding	Levels of repair concepts
Provisioning	Supply concepts
Formal guidance	Manning
Timing (Conferences, etc.)	Comptroller support

57. Do you feel that there are enough potential advantages of multi-service acquisitions to warrant their continued use?

58. What is the single most important area for improvement?

59. What do you feel are the key areas for future research into the multiservice acquisition process?

APPENDIX B

COMPUTER PROGRAM FOR DATA ORGANIZATION

```
 PROGRAM GRAD
THIS PROGRAM SORTS INTERVIEW RESPONSES BY QUESTION NUMBER,SYSTEM
CODE, FUNCTIONAL AREA, ORGANIZATION, AND INTERVIEWEE.
THE FOLLOWING DATA DICTIONARY APPLIES TO SELECTION CODE
     CODE = BASE ON WHICH SELECTION IS MADE
       QN = QUESTION NUMBER TO BE SELECTED
       SN = SYSTEN NUMBER CODE
       FA = FUNCTIONAL AREA CODE
      ORG = ORGANIZATIONAL CODE
      INT = INTERVIEWEE CODE
THE FOLLOWING TERMS APPLIES TO DATA CARDS
        Q = QUESTION NUMBER OF RESPONSE  QUEST = QUESTION ASKED
        S = SUBJECT SYSTEM CODE         SYSTM = SYSTEM
        F = FUNCTIONAL CODE              FUNCT = FUNCTIONAL AREA
        O = ORGANIZATIONAL CODE          ORGAN = OFFICE SYMBOL
        I = CODE FOR INTERVIEWEE         INTRV = INTERVIEWEE
                                         RESPN = RESPONSE
CHARACTER RESPN*66,CODE*14,QUEST*300,SYSTM*11,FUNCT*15,INTRV*25
CHARACTER ORGAN*25
INTEGER RES,QN,FA,ORG,SN,INT,Q,S,F,I,O
THE NEXT CARD READS THE CODES TO BE SELECTED FROM A LOCAL FILE
NAMED TAPE 11
READ (11,'(I2,X,I2,X,I1,X,I2,X,I3)')QN,SN,FA,ORG,INT
ABOVE CARD CONVERTS ALPA CODE INTO SPECIFIC ITEMS TO BE SELECTED
          IF (QN .EQ. 99) THEN
               REWIND 11
               GOTO 99
          ELSE
               GOTO 10
          ENDIF
THE NEXT CARD READS THE RESPONSES OFF A LOCAL FILE NAMED TAPE 12
READ (12,'(I2,X,I2,X,I1,X,I2,X,I3,458)')Q,S,F,O,I,RESPN
     IF (((QN .EQ. Q) .OR. (QN .EQ. 0)) .AND.
!    ((SN .EQ. S) .OR. (SN .EQ. 0)) .AND.
!    ((FA .EQ. F) .OR. (FA .EQ. 0)) .AND.
!    ((ORG .EQ. O) .OR. (ORG .EQ. 0)) .AND.
!    ((INT .EQ. I) .OR. (INT .EQ. 0))) THEN
     IF (Q .EQ. 1) THEN
          QUEST='WHAT IS YOUR RANK?'
     ELSEIF (Q .EQ. 2) THEN
          QUEST='WHAT IS YOUR AFSC OR GS SERIES?'
    ELSEIF (Q .EQ. 3) THEN
          QUEST='HOW MANY YEARS EXPERIENCE DO YOU HAVE IN ACQUISIT
!ION FUNCTIONS?'
          ELSEIF (Q .EQ. 4) THEN
          QUEST='HOW MANY YEARS EXPERIENCE DO YOU HAVE WITH DEM PR
!OGRAMS?'
     ELSEIF (Q .EQ. 5) THEN
          QUEST='HOW MANY YEARS DO YOJ HAVE IN MULTISERVICE ACQUIS
!ITIONS?'
     ELSEIF (Q .EQ. 6) THEN
          QUEST='WHAT SPECIFIC PROGRAMS HAVE YOU BEEN INVOLVED IN
!CURRENTLY WORKING? WHICH WERE MULTISERVICE?'
     ELSEIF (Q .EQ. 7) THEN
          QUEST='WHAT ARE YOJR RESPONSIBILITIES WITH THESE PROGRAM
!S?'
     ELSEIF (Q .EQ. 8) THEN
```

```
          QUEST='WHAT CHANGES WOULD YOU RECOMMEND IN THE FUNDING STR
     &UCTURE?      '
        ELSEIF (Q .EQ. 43) THEN
          QUEST='HOW MUCH INPUT DO YOU HAVE IN THE PROVISIONING PROC
     &ESS?'
        ELSEIF (Q .EQ. 44) THEN
          QUEST='WHAT PROBLEMS EXIST IN THE CATALOGING SUSTEM? ON SI
     &NGLE SERVICE ACQUISITIONS? ON MULTISERVICE ACQUISTIONS?'
        ELSEIF (Q .EQ. 45) THEN
          QUEST='HOW DOES THE ARMY FORECAST INITIAL REQUIREMENTS TO
     &PUSH ASSETS OUT TO THE FIELD?'
        ELSEIF (Q .EQ. 46) THEN
          QUEST='WHAT DIFFERENCES ARE THERE BETWEEN AF AND ARMY PROV
     &ISIONING PROCEDURES?'
        ELSEIF (Q .EQ. 47) THEN
          QUEST='DO THESE DIFFERENCES CAUSE PROVISIOING AND FOLLOW-O
     &N SUPPORT PROBLEMS FOR MULTISERVICE PROGRAMS?'
        ELSEIF (Q .EQ. 48) THEN
          QUEST='HOW SHOULD THESE PROBLEMS BE RESOLVED?'
        ELSEIF (Q .EQ. 49) THEN
          QUEST='WHAT FORMAL TRAINING HAVE YOU HAD FOR YOUR ROLE IN
     &THE ACQUISITION PROCESS? (TECH SCHOOL,PCE,GRAD PROG,ETC)?'
        ELSEIF (Q .EQ. 50) THEN
          QUEST='DO YOU FEEL YOUR TRAINING ADEQUATELY PREPARED YOU
     &TO HANDLE SINGLE SERVICE ACQUISITION PROGRAMS?'
        ELSEIF (Q .EQ. 51) THEN
          QUEST='DESCRIBE THE TRAINING, IF ANY YOU HAVE HAD TO PREPA
     &RE YOU TO HANDLE MULTISERVICE ACQUISITIONS.'
        ELSEIF (Q .EQ. 52) THEN
          QUEST='DO YOU FEELYOUR TRAINING ,BY ITSELF, PREPARED YOU T
     &O HANDLE MULTISERVICE PROGRAM PROBLEMS?'
        ELSEIF (Q .EQ. 53) THEN
          QUEST='DO YOU FEEL THERE SHOULD BE A FORMAL TRAINING PROGR
     &AM SPECIFIALLY FOR PERSONNEL ASSIGNED TO MULTISERVICE ACQUISITION
     &PROGRAMS?'
        ELSEIF (Q .EQ. 54) THEN
          QUEST='HOW MUCH TRAINING SHOULD BE GIVEN? WHAT THINGS WOUL
     &D YOU INCLUDE IN THE TRAINING?'
        ELSEIF (Q .EQ. 55) THEN
          QUEST='IN WHAT FORMAT SHOULD THE TRAINING BE PRESENTED?'
        ELSEIF (Q .EQ. 56) THEN
          QUEST='WHAT WOULD YOU RECOMMEND FOR IMPROVING LOGISTICS SU
     &PPORT FOR MULTISERVICE ACQUISITION PROGRAMS? USE THE FOLLOWING AS
     &A GUIDE. TRAINING,FUNDING,PROVISIOING,FORMAL GUIDANCE,TIMING (CONF
     &ERENCES,ETC) MAINTENANCE CONCEPTS, LEVELS OF REPAIR CONCEPTS,SUPPL
     &Y CONCEPTS,MANNING COMPTROLLER SUPPORT.'
        ELSEIF (Q .EQ. 57) THEN
          QUEST='DO YOU FEEL THAT THERE ARE ENOUGH POTENTIAL ADVANTA
     &GES OF MULTISERVICE ACQUISITIONS TO WARRANT THEIR CONTINUED USE?'
        ELSEIF (Q .EQ. 58) THEN
          QUEST='WHAT IS THE SINGLE MOST IMPORTANT AREA FOR IMPROVEM
     &ENT?'
        ELSEIF (Q .EQ. 39) THEN
          QUEST='WHAT DO YOU FEEL ARE THE KEY AREAS FOR FUTURE RESEA
     &RCH INTO MULTISERVICE ACQUISITION PROCESS?'
           ELSE
                PRINT '(T5,A,2I,A)','QUESTION ',Q,' NOT FOUND'
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ENDIF
IF (S .EQ. 1) THEN
     SYSTM='AN/TSC-94  '
ELSEIF (S .EQ.  2) THEN
     SYSTM='AN/TTC-39  '
ELSEIF (S .EQ.  3) THEN
     SYSTM='AN/TSC-100 '
ELSEIF (S .EQ.  4) THEN
     SYSTM='AN/MSC-64  '
ELSEIF (S .EQ.  5) THEN
     SYSTM='AN/GSC-40  '
ELSEIF (S .EQ.  6) THEN
     SYSTM='AN/TSC-170 '
ELSEIF (S .EQ.  7) THEN
     SYSTM='AN/FSC-78  '
ELSEIF (S .EQ.  8) THEN
     SYSTM='AN/MSC-46  '
ELSEIF (S .EQ.  9) THEN
     SYSTM='AN/TSC-54  '
ELSEIF (S .EQ. 10) THEN
     SYSTM='TSC64,3SC40'
ELSEIF (S .EQ. 11) THEN
     SYSTM='TSC94/1[illegible]0  '
ELSEIF (S .EQ. 12) THEN
     SYSTM='AN/USC-28  '
ELSEIF (S .EQ. 13) THEN
     SYSTM='TSC10*RC17J'
ELSEIF (S .EQ. 25) THEN
     SYSTM='GENERAL    '
ELSE
     PRINT '(T5,A,I2,A)','SYSTEM ',S,' NOT FOUND'
ENDIF
IF (F .EQ. 1) THEN
     FUNCT='DEMOGRAPHIC     '
ELSEIF (F .EQ. 2) THEN
     FUNCT='GENERAL         '
ELSEIF (F .EQ. 3) THEN
     FUNCT='GUIDANCE        '
ELSEIF (F .EQ. 4) THEN
     FUNCT='COORDINATION    '
ELSEIF (F .EQ. 5) THEN
     FUNCT='FUNDING         '
ELSEIF (F .EQ. 6) THEN
     FUNCT='PROVISIONING    '
ELSEIF (F .EQ. 7) THEN
     FUNCT='SUMMARY         '
ELSE
     PRINT '(T5,A,I2,A)','FUNCT AREA ',F,' NOT FOUND'
ENDIF
IF (I .EQ. 1) THEN
     INTRV='PAT CREELEY                '
ELSEIF (I .EQ.  2) THEN
     INTRV='ED EZZELL                  '
ELSEIF (I .EQ.  3) THEN
     INTRV='ART WHITE                  '
ELSEIF (I .EQ.  4) THEN
     INTRV='LT BOB CRAWFORD            '
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ELSEIF (I .EQ. 67) THEN
     INTRV='TONY BURAY                '
ELSEIF (I .EQ. 69) THEN
     INTRV='TONY TAYLOR               '
ELSEIF (I .EQ. 70) THEN
     INTRV='GARY AYERS                '
ELSEIF (I .EQ. 72) THEN
     INTRV='BRUCE THACKER             '
ELSEIF (I .EQ. 74) THEN
     INTRV='JOHN FORD                 '
ELSEIF (I .EQ. 76) THEN
     INTRV='MR KEYES                  '
ELSEIF (I .EQ. 79) THEN
     INTRV='MR STOJT                  '
ELSEIF (I .EQ. 80) THEN
     INTRV='BERNIE PRICE              '
ELSEIF (I .EQ. 82) THEN
     INTRV='LEW IACCARINO             '
ELSEIF (I .EQ. 83) THEN
     INTRV='RON JOHNSON               '
ELSE
     PRINT '(T5,A,I2,A)','INTERVIEWEE ',I, ' NOT FOUND'
ENDIF
IF (O .EQ. 1) THEN
     ORGAN='SM-ALC/MMMRR              '
ELSEIF (O .EQ.  2) THEN
     ORGAN='SM-ALC/MMAMA              '
ELSEIF (O .EQ.  3) THEN
     ORGAN='SM-ALC/MMAMB              '
ELSEIF (O .EQ.  4) THEN
     ORGAN='SM-ALC/MMCMC              '
ELSEIF (O .EQ.  5) THEN
     ORGAN='SM-ALC/MMCM               '
ELSEIF (O .EQ.  6) THEN
     ORGAN='SM-ALC/MMAD               '
ELSEIF (O .EQ.  7) THEN
     ORGAN='SM-ALC/MMA                '
ELSEIF (O .EQ.  8) THEN
     ORGAN='SM-ALC/MMSPO              '
ELSEIF (O .EQ.  9) THEN
     ORGAN='SM-ALC/MMARA              '
ELSEIF (O .EQ. 10) THEN
     ORGAN='SM-ALC/MAIP               '
ELSEIF (O .EQ. 11) THEN
     ORGAN='SM-ALC/MMCBO              '
ELSEIF (O .EQ. 12) THEN
     ORGAN='SM-ALC/MMCOB              '
ELSEIF (O .EQ. 13) THEN
     ORGAN='SM-ALC/MMCRACO            '
ELSEIF (O .EQ. 14) THEN
     ORGAN='SM-ALC/MMCSO              '
ELSEIF (O .EQ. 15) THEN
     ORGAN='SM-ALCMMCRAA              '
ELSEIF (O .EQ. 16) THEN
     ORGAN='SM-ALC/MMCMA              '
ELSEIF (O .EQ. 17) THEN
     ORGAN='SM-ALC/MMCOS              '
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            ORGAN='AFLC/LOLCP                    '
        ELSEIF (O .EQ. 56) THEN
            ORGAN='AFLC/LOM                      '
        ELSE
            PRINT '(T5,A,I2,A)','ORGANIZATION ',O,'NOT FOUND'
        ENDIF
        PRINT '(///T5,A,I2)','QUESTION NUMBER ',QN
        PRINT *,QUEST
        PRINT '(T15,A,T24,A/T5,AT24,A/T3,A,T24,A/T15,A,T24,A//T5,A,X,A/',
        A,X,A/) ',
        'SYSTEM :',SYSTM,
        'FUNCTIONAL AREA :',FUNCT,
            'ORGANIZATION :', ORGAN,
            'INTERVIEWEE :', INTRV, 'RESPONSE :', RESPN
        RES=1
        GOTO 10
    ELSEIF (Q .EQ. 99) THEN
        REWIND 12
        GOTO 15
    ELSE
        IF ((Q .EQ. 0) .AND. (RES .EQ. 1)) THEN
        PRINT '(T5,A/)',RESPN
        GOTO 10
            ELSE
                RES=0
                GOTO 10
            ENDIF
    ENDIF
CONTINUE
PRINT '(T5,A/)', 'THIS SELECTION IS COMPLETED'
END
```

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